**From:** Liscio, Matthew P CIV USN NAVSEA DET RASO VA (USA) [matthew.liscio@navy.mil]
**Sent:** Thursday, December 3, 2020 5:04 AM
**To:** Stoick, Paul T CIV USN NAVFAC SW SAN CA (USA) [paul.stoick@navy.mil]; Mccray, Sean-Ryan CTR (USA) [sean-ryan.mccray.ctr@navy.mil]
**Subject:** FW: D9013 TO-F5420 (X062); Submittal: 2020-11-9 Weekly QA Report for Contract No. N44255-14-D-9013, Task Order F5420 (X062): Base-wide Radiological Quality Assurance Services
**Attachments:** Weekly RAD QA Report 2020-11-16.pdf

**Follow Up Flag:** Follow up
**Flag Status:** Flagged

(b) (5)

[redacted]

---

**From:** Williamson, Travis <williamsont@battelle.org>
**Sent:** Monday, November 23, 2020 12:47 PM
**To:** Howard, Leslie Ann CIV USN BRAC PMO SAN CA (USA) <leslie.howard@navy.mil>; Stoick, Paul T CIV USN NAVFAC SW SAN CA (USA) <paul.stoick@navy.mil>; Naimi, Hamidullah CTR NAVFAC SW, ROICC5 <hamidullah.naimi.ctr@navy.mil>; Delong, Douglas E CTR USN COMNAVFACENGCOM DC (USA) <douglas.delong.ctr@navy.mil>; Nelson, Glen Alfred CIV USN BRAC PMO SAN CA (USA) <glen.nelson@navy.mil>; Ivey, Glennwood T Jr CIV USN (USA) <glennwood.ivey@navy.mil>; Liscio, Matthew P CIV USN NAVSEA DET RASO VA (USA) <matthew.liscio@navy.mil>; Ohannessian, Sharon A CIV USN NAVFAC SW SAN CA (USA) <sharon.ohannessian@navy.mil>; Noble, Kimberly K CIV (USA) <kimberly.k.noble1@navy.mil>; Clark, David J CIV USN NAVFAC SW SAN CA (USA) <david.j.clark2@navy.mil>; Larson, Leo M CTR (USA) <leo.m.larson.ctr@navy.mil>
**Cc:** Berry, Adam L <berry@battelle.org>; Jensen, Jarvis <jensenj1@battelle.org>; Chi, Minh <chi@battelle.org>
**Subject:** [Non-DoD Source] RE: D9013 TO-F5420 (X062); Submittal: 2020-11-9 Weekly QA Report for Contract No. N44255-14-D-9013, Task Order F5420 (X062): Base-wide Radiological Quality Assurance Services

Please find attached for your records the weekly report documenting activities conducted by Battelle's radiological QA field team during the week of November 16, 2020. There were a total of four surveillances and one confirmatory survey performed last week (all at HPNS) with no deficiencies identified.

Please let me know if you have any questions and hope you have a safe and enjoyable Thanksgiving holiday!

Thanks,
Travis

**Travis Williamson, PE, PMP**
*Program Manager*
Environment and Agriculture Business Line
Office: 614.424.4796 | Mobile: 614.226.9716 | Fax: 614.458.4796
williamsont@battelle.org

**Battelle**
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**Radiological QA Summary Report:**
**Week of November 16, 2020**
**Hunters Point Naval Shipyard and Treasure Island San Francisco, California**
**N44255-14-D-9013**
**Task Order F5420 (X062)**

**11/23/2020**

**QA Surveillance Summary**

| Contractor/Site/Bldg./Survey Unit | Surveillances Conducted | | Non-Conformance Issues | |
|---|---|---|---|---|
| | Week | To Date | Week | To Date |
| APTIM Basewide Parcel C | 0 | 5 | 0 | 0 |
| APTIM Basewide | 0 | 306 | 0 | 11 |
| APTIM Parcel E Revetment | 0 | 174 | 0 | 4 |
| APTIM Treasure Island Arsenic/TPH Excavation | 0 | 21 | 0 | 1 |
| APTIM Alameda Building 5 | 0 | 24 | 0 | 0 |
| APTIM Parcel F | 0 | 20 | 0 | 0 |
| APTIM Parcel E Phase 1/3 | 2 | 55 | 0 | 0 |
| APTIM Parcel G Rework | 2 | 27 | | |
| Gilbane Treasure Island Site 12 | 0 | 131 | 0 | 2 |
| Gilbane/Parcel E-2 | 0 | 162 | 0 | 6 |
| Gilbane Building 253/211 | 1 | 36 | 0 | 1 |
| Gilbane Parcel E Phase 2 | 0 | 32 | 0 | 0 |
| ECC-Insight | 0 | 19 | 0 | 1 |
| NOREAS Treasure Island/Site 12 Data Gap | 0 | 15 | 0 | 0 |
| Wood | 0 | 19 | 0 | 3 |
| Jacobs | 0 | 16 | 0 | 0 |
| Tetra Tech/Bldg. 130/SU 12 | 0 | 1 | 0 | 0 |
| Tetra Tech/Bldg. 351A/SU 43 | 0 | 1 | 0 | 0 |
| Tetra Tech/Bldg. 204 Sewer | 0 | 3 | 0 | 0 |
| Tetra Tech/Bldg. 271 | 0 | 9 | 0 | 0 |
| Tetra Tech/Bldg. 406 | 0 | 9 | 0 | 0 |
| Tetra Tech/Bldg. 253 | 0 | 1 | 0 | 0 |
| Tetra Tech/Bldg. 258 | 0 | 1 | 0 | 0 |

**Summary of Navy-Directed Confirmatory Scanning and/or Sampling**

| Contractor/Site/ Bldg./Survey Unit | Reason | Confirmatory Scanning and/or Sampling |
|---|---|---|
| Parcel C Outfall Survey | BRAC Request | HPNS-QAR-2019-0033 Gamma Walk-over |
| Parcel C Building 258 Sample Storage | BRAC Request | HPNS-QAR-2020-0065 Routine Survey |

## SUMMARY OF WORK CONDUCTED:

**Monday, 11/16/2020**

- Surveillance # HPNS-QAS-2020-0148 was conducted to verify that APTIM Parcel G rework radiological air sampling was performed in compliance with approved site documents. No deficient conditions were observed during this surveillance
- Surveillance # HPNS-QAS-2020-0149 was performed to observe APTIM Parcel E Phases 1/3 soil sample preparation for shipment to an off-site laboratory for analysis to confirm procedures in approved site documents were followed. No deficient conditions were observed during this surveillance.

**Tuesday, 11/17/2020**

- Battelle staff attended the APTIM Basewide CQC meeting at 09:45, the Gilbane Buildings 211/253 CQC meeting at 10:00, the Battelle Tag-up meeting at 10:30 and the APTIM Parcel E Phases 1/3 CQC meetings at 11:00.

**Wednesday, 11/18/2020**

- Surveillance # HPNS-QAS-2020-0150 was completed to observe APTIM Parcel G rework radiological soil sampling at RSY Pad #12, Use 1. No deficient conditions were observed during this surveillance.
- Surveillance # HPNS-QAS-2020-0151 was performed to verify that Gilbane Buildings 211/253 radiation and contamination controls during remedial floor scabbling were maintained in compliance with approved site documents. No deficient conditions were observed during this surveillance.

**Thursday, 11/12/2020**

- Confirmatory survey # HPNS-QAS-2020-0152 was documented to confirm APTIM Parcel E Phases 1/3 biased gamma static survey data from RSY-4 Pad E-28, Use 2 locations #296, 297, 305 and 323. The average difference between APTIM and Battelle data sets was 5.65%.

**Friday, 11/13/2020**

- The weekly report components were drafted and sent to Battelle's Project Manager for review.

# QA SUMMARY ISSUES/DEFICIENCIES

| Issue # | Contractor | Independent Radiological QA Finding | Date of Initial Finding | Notification to Contractor | Responsible Party | Contractor Est. Date to Resolution | Resolved (Yes/No) | Date Resolved | Battelle Contract Number | Additional Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | CBI | Postings are windblown, bleached, saggy, not in compliance with requirement to be able to withstand the elements. | 2/18/16 | 2/18/16 | CBI | NA | Yes | 3/31/16 | TO-0096 | Additional surveillances on dates 3/22/2016 and 3/31/2016 |
| 2 | ITSI/GILBANE | Faded postings (not readable) | 2/18/16 | 2/18/16 | ITSI/GILBANE | NA | Yes | 3/28/16 | TO-0096 | Additional surveillances on dates 3/21/2016 and 3/28/2016 |
| 3 | ITSI/GILBANE | 180 second background time used, 300 seconds stated in procedure. | 2/24/16 | 2/24/16 | ITSI/GILBANE | NA | Yes | 2/25/16 | TO-0096 | Bryson FCR issued |
| 4 | CBI | MOU Map does not accurately show contractor's license area | 2/29/16 | 2/29/16 | CBI | NA | Yes | 3/17/16 | TO-0096 | MOU Map redrawn to include contractor's license area |
| 5 | ITSI/GILBANE | RAM stored in coolers, lack of spill kit/sorbant at work site | 3/8/16 | 3/8/16 | ITSI/GILBANE | NA | Yes | 3/30/16 | TO-0096 | Spill Kit/Sorbant condition corrected on 3/8/2016; Sources placed into DOT paint cans on 3/30/2016 |
| 6 | CBI | LMI 3500-1000 Detector Height | 3/10/16 | 3/10/16 | CBI | NA | Yes | 3/14/16 | TO-0096 | Observation only / No Deficiency |
| 7 | ITSI/GILBANE | RS-700 Response check source geometry | 4/14/16 | 4/14/16 | ITSI/GILBANE | 5/10/16 | Yes | 5/10/16 | TO-0096 | ITSI FCR #008 generated per CQC meeting |
| 8 | CBI | RSY-3 Pad Debris greater than 6" diameter | 4/28/2016 | 4/28/2016 | CBI | 5/23/2016 | Yes | 5/23/2016 | TO-0096 | Work Instruction D2005-0008-005 Radiological Screening Yard Survey Of Comingled Soil and Plastic Sheeting submitted to Battelle on 5/20/2016. |
| 9 | CBI | Portal monitor load documentation | 6/13/16 | 6/13/16 | CBI | 6/14/16 | Yes | 6/14/16 | TO-0096 | Leslie Howard provided map along with statement of load origin |
| 10 | CBI | Portal Monitor RSOR did not observe recycle materials being loaded | 6/13/16 | 6/13/16 | CBI | 7/11/2016 | Yes | 7/11/2016 | TO-0096 | Revised Procedure D2005-0008-003 "Screening of Trucks Using Stationary Portal Monitor and Portable Survey Instrumentation. Revision 1 7/11/2016 |
| 11 | CBI | RCT performing Trailer hand scan | 6/27/16 | 6/27/16 | CBI | 6/27/16 | Yes | 6/27/16 | TO-0096 | Training provided to RCT, Training verification document veiwed |
| 12 | CBI | Truck overspeed sensor not connected / not functioning | 6/27/16 | 6/27/16 | CBI | 7/11/2016 | Yes | 7/11/16 | TO-0096 | Participated in "Drive Through" test on 7/11/2016 13 20 |
| 13 | CBI | Hand scan log not being used. Being generated after operations | 6/28/16 | 6/28/16 | CBI | 7/7/2016 | Yes | 7/7/16 | TO-0096 | Viewed correction during HPNS-QAS-2016-0087 |
| 14 | CBI | Truck survey log not being completed (Dates and Times) | 6/28/16 | 7/6/16 | CBI | 7/7/2016 | Yes | 7/7/16 | TO-0096 | Viewed correction during HPNS-QAS-2016-0087 |
| 15 | ITSI/GILBANE | Active RWP not available at control point | 1/4/17 | 1/4/17 | ITSI/GILBANE | 1/4/2017 | Yes | 1/4/17 | TO-0096 | RWP #HPNS-E2-2017-008 produced/placed the same day |
| 16 | CBI-TI | Rad Postings at arsenic/TPH excavation faded, missing, falling | 3/28/17 | 3/28/17 | CBI-TI | 3/29/2017 | Yes | 3/29/17 | TO-0096 | D. Morrison - photo's of corrective actions sent to A. Berry |
| 17 | CBI-Revetment | Parcel E-2 RSY Pad C-6, Lift 2 greater than 9" thick | 6/27/17 | 6/27/17 | CBI-Revetment | 6/29/2017 | Yes | 6/29/17 | TO-0096 | CB&I pad tracking sheet has been updated to include QC inspection date. Tracking sheet is now accessible by radiological department. Pad re-work measured/observed as satisfactory |
| 18 | CBI/APTIM-Revetment | Parcel E-2 RSY Pad D-4, Use 3 greater than 9" thick | 8/21/17 | 8/21/17 | CBI/APTIM-Revetment | 8/22/2017 | Yes | 8/22/17 | TO-0096 | Re-work performed (pad grading). C. Hanif mistake letter published during CTO-0013 CQC meeting on 8/22/2017 |
| 19 | CBI/APTIM-Revetment | Parcel E-2 RSY Pad C-10, Use 3 greater than 9" thick | 8/29/2017 | 8/29/2017 | CBI/APTIM-Revetment | 9/1/2017 | Yes | 9/1/2017 | TO-0096 | Re-work performed (pad grading) excess yardard removed from pad. New pad layout design used and employees trained on new methodology |
| 20 | ECC-Insight | No estimated collective dose stated on RWP # ECC-HP-003 | 12/11/2017 | 12/11/2017 | ECC-Insight | 12/11/2017 | Yes | 12/11/2017 | TO-0096 | Collective estimated dose added to RWP |
| 21 | Gilbane | Faded postings (not readable) | 3/19/2018 | 3/19/2018 | Gilbane | 3/26/2018 | Yes | 3/26/2018 | TO-0096 | Postings replaced |
| 22 | CBI/APTIM-Revetment | Radiological postings missing over 200' section of fence line | 7/3/18 | 7/3/18 | APTIM-Revetment | 7/5/2018 | Yes | 7/5/18 | TO-0096 | Postings replaced |
| 23 | Wood | No Wood Radiological Postings at the RSY4 during work | 8/14/18 | 8/14/18 | Wood | 8/15/2018 | Yes | 8/16/18 | TO-0096 | Wood postings installed |
| 24 | APTIM-Basewide | RS-700 speed greater than 0.25 Meters per second | 10/1/2018 | 10/1/2018 | APTIM-Basewide | 10/29/2018 | Yes | 10/29/2018 | TO-0096 | Use of groundspeed evaluation form (RIR # 2018-HPNS-0013) |
| 25 | APTIM-Revetment | Radiological postings missing over 200' section of fence line | 10/8/18 | 10/8/18 | APTIM-Revetment | 10/8/2018 | Yes | 10/8/18 | TO-0096 | Postings on T-posts installed within Parcel E-2 Fenceline to Prevent theft of aluminum postings. Posings hung on fenceline are stolen during non-working hours |
| 26 | Wood | No RWP during work with licensed materials | 1/8/19 | 1/8/19 | Wood | 1/9/2019 | Yes | 1/9/19 | TO-0096 | RWP's HTP-19-001 and HTP-19-002 produced |
| 27 | Wood | No Q1/2019 quarterly routine survey perfoemed at RSY-4 | 5/9/19 | 5/9/19 | Wood | 5/14/2019 | Yes | 5/14/19 | X0-62 | Quarterly survey performed on 5/14/2019 |
| 28 | Gilbane | Employee observed with coffee cup with the Site 32 RCA | 7/10/19 | 7/10/19 | Gilbane | 7/11/2019 | Yes | 7/11/19 | X0-62 | RWP refresher training conducted/class roster submitted |
| 29 | APTIM-Parcel F | RSI RS-700 function testing with Co-60 and no Th-232 count | 8/19/2019 | 8/19/2019 | APTIM-Parcel F | 9/19/2019 | Yes | 10/1/2019 | X0-62 | APTIM FCR #3 approves use of Cabrera RS-700 (CLASS) WI |
| 30 | Gilbane | No radiological air sampler running at Site 32 during soil moving | 11/25/2019 | 11/25/2019 | Gilbane Site 12 | 11/25/2019 | Yes | 12/3/2019 | X0-62 | Airsampler observed running on 12/3/2019 - Photograph |

**ATTACHMENTS**

# Quality Assurance Surveillance Report

Surveillance Checklist Number(s) HPNS-QAS-2020-0148 Surveillance Date 11/16/2020

Surveillance Report Number HPNS-QAR-2020-0148 Surveillance Report Generation Date 11/16/2020

Number of Surveillance Photographs Taken 6

**Describe the work event, contractor, site location, date and weather:**

This surveillance observed APTIM's radiological air sampling. No APTIM staff time was taken to accommodate this surveillance. The weather was 63°F and sunny.

**Describe what was observed:**

The Battelle QA team arrived at Parcel G to observe that radiological air sampling was set-up and operating due to movement or processing of potentially impacted soil that was occurring inside the RCA. A total of 4 low-volume air monitoring stations were operating to collect air samples. A set of air samplers representing the upwind and downwind locations of Parcel G were running and will be continuously ran till the end of the work week where the air samples will be collected and sent to a lab for analysis (Figures 1 and 2). A second set of air samplers were operating upwind and downwind near the vicinity where soil movement or processing was occurring. The air samples are collected at the end of the workday and counted the following day with a Ludlum 3030 instrument. Both air samplers were placed approximately at waist height and were running at 60 liters per minute (Figures 3 and 4). The air samplers were also operating within the calibration window (Figures 5 and 6).

All observed aspects of APTIM's radiological air sampling were in compliance with all approved work documentation.

**Describe any contractor deficient conditions observed with reference:**

None

**Recommendations, Process Improvements, or Suggestions:**

None

**Battelle Project Signatories**

X

Minhsec Chi
Battelle QA Radiation Safety Specialist

## Surveillance Photographs HPNS-QAR-2020-0148

Figure 1 – Upwind air monitoring station on the corner of Spear Ave and H St

Figure 2 – Downwind air monitoring station at Berth 10

## Surveillance Photographs HPNS-QAR-2020-0148 (Continued)


Figure 3 – Low-volume air sampler #3326 located north-west of the RCA boundary


Figure 4 – Low-volume air sampler #4364 located at the corner of Manseau St and Moreell St

## Surveillance Photographs HPNS-QAR-2020-0148 (Continued)


Figure 5 – Air sampler #3326 calibration sticker, due 8/7/2021


Figure 6 – Air sampler #4364 calibration sticker, due 7/16/2021

*Battelle QA Form - APTIM Parcel G Phases 1/2 Radiological Air Sampling*

| | | | |
|---|---|---|---|
| **Date/Time:** | Date: 11/16/2020 Time: 0820-0900 | **QA Inspector:** | M. Chi |
| **Contractor/Survey #:** | APTIM | **Surveillance #** | HPNS-QAS-2020-0148 |
| **Equipment surveyed:** | N/A | **Work area:** | Parcel G |

| *Requirement* | *Comments* | *Yes/No/NA* |
|---|---|---|
| **The radiation safety staff shall perform measurements of radioactive material concentrations in air for areas where radioactive materials are handled or processed in unencapsulated form.** | **Low-volume air samplers were on and operating properly due to soil movement or processing in the Parcel G RCA.** | Y |
| **Air samples should be representative of the air in the worker's breathing zone. When obtaining representative samples from the breathing zone is not practicable, every effort should be made to locate the sample collection media in a location known or suspected of containing a higher concentration of radioactive material than the breathing zone (e.g., position the sample collection device between the worker and the source of airborne radioactive material)** | **The low-volume air samplers were placed at around waist height and set upwind and downwind where soil movement and handling activities were occurring.** | Y |
| **Low volume air sample pumps should run between 10-100 liters per minute (optimally 50 LPM)** | **The air samplers were running at 60 liters per minute.** | Y |
| **Air sample pump rotometers shall be calibrated annually or earlier if repairs are made** | **The air samplers were used within the calibration window.** | Y |
| **A minimum of two air monitoring stations will be installed to collect air samples; one upwind and one downwind station will be monitored for the duration of the field activities.** | **A set of upwind and downwind air monitoring stations set where air samples were collected and counted daily with a Ludlum 3030. A separate upwind and downwind air monitoring stations have air samples collected on a weekly basis that are sent to a lab for analysis.** | Y |
| **Air samples will be counted on site with a Ludlum Model 3030 analyzer (or equivalent).** | **The in-house air sample filters are counted on the Ludlum 3030 instruments.** | Y |
| **Samples that exceed the action limits will be sent to the off-site laboratory for ROC identification and quantification.** | **No air samples have exceeded the action limits.** | N/A |

References: "Final, Revision 1 Parcel G Removal Site Evaluation Work Plan Addendum" July 2020
APTIM Work Instruction AMS-710-07-WI-04011 "Internal Exposure Control and Monitoring" July 30, 2017

| | | | |
|---|---|---|---|
| **Signature:** |  | **Date:** | 11/16/2020 |

*Battelle QA Form - APTIM Parcel G Phases 1/2 Radiological Air Sampling*

| | | | |
|---|---|---|---|
| **Date/Time:** | 11/16/2020 0820 - 0900 | **QA Inspector:** | M. CHI |
| **Contractor/Survey #:** | APTIM | **Surveillance #** | HPNS-QAS-2020-0148 |
| **Equipment surveyed:** | N/A | **Work area:** | PARCEL 6 |

| *Requirement* | *Comments* | *Yes/No/NA* |
|---|---|---|
| **The radiation safety staff shall perform measurements of radioactive material concentrations in air for areas where radioactive materials are handled or processed in unencapsulated form.** | LOW-VOL AIR SAMPLERS WERE OPERATING DUE TO SOIL MOVEMENT/PROCESSING IN PARCEL 6. | Y |
| **Air samples should be representative of the air in the worker's breathing zone. When obtaining representative samples from the breathing zone is not practicable, every effort should be made to locate the sample collection media in a location known or suspected of containing a higher concentration of radioactive material than the breathing zone (e.g., position the sample collection device between the worker and the source of airborne radioactive material)** | LOW-VOL AIR SAMPLERS WERE PLACED AROUND WAIST LEVEL HEIGHT U/W AND D/W OF SOIL MOVEMENT/HANDLING ACTIVITIES. | Y |
| **Low volume air sample pumps should run between 10-100 liters per minute (optimally 50 LPM)** | AIR SAMPLERS RUNNING AT 60 LPM. | Y |
| **Air sample pump rotometers shall be calibrated annually or earlier if repairs are made** | AIR SAMPLERS WERE USED WITHIN THE CALIBRATION WINDOW. | Y |
| **A minimum of two air monitoring stations will be installed to collect air samples; one upwind and one downwind station will be monitored for the duration of the field activities.** | AN U/W AND D/W AIR MONITORING STATIONS WITH SAMPLES COLLECTED DAILY. A SEPARATE U/W AND D/W STATIONS SENT TO LAB WEEKLY. | Y |
| **Air samples will be counted on site with a Ludlum Model 3030 analyzer (or equivalent).** | AIR SAMPLES COUNTED ON LUDLUM 3030. | Y |
| **Samples that exceed the action limits will be sent to the off-site laboratory for ROC identification and quantification.** | NO SAMPLES HAVE EXCEEDED THE ACTION LIMITS. | N/A |

References: "Final, Revision 1 Parcel G Removal Site Evaluation Work Plan Addendum" July 2020
APTIM Work Instruction AMS-710-07-WI-04011 "Internal Exposure Control and Monitoring" July 30, 2017

| | | | |
|---|---|---|---|
| **Signature:** | | **Date:** | 11/16/2020 |

3326 - NW OF RCA BOUNDARY
4864 - SE OF RCA BOUNDARY

# Quality Assurance Surveillance Report

Surveillance Checklist Number(s) HPNS-QAS-2020-0149 Surveillance Date 11/16/2020

Surveillance Report Number HPNS-QAR-2020-0149 Surveillance Report Generation Date 11/17/2020

Number of Surveillance Photographs Taken 13

**Describe the work event, contractor, site location, date, and weather**. On 11/16/2020 between 12:36 and 13:09 the Battelle QA Field Team performed a surveillance observing APTIM Parcel E Phases 1/3 soil sample preparation for shipment to an off-site laboratory for analysis. The samples being shipped were systematic samples from Parcel E, RSY-4, Pad E-14, Use 2. This surveillance was conducted at the APTIM Parcel C laboratory trailer. Weather during this surveillance included partially cloudy skies with the temperature in the low 60's F. Approximately 15 minutes of APTIM staff

**Describe what was observed:** Upon arrival to the APTIM Parcel C trailer, the systematic samples from RSY-4, E-14, Use 2 had tamper evident tape applied to the lids and were single bagged (Figure 1). The tamper evident tape applied was initialed and dated by the collecting RCT as required (Figure 2). All sample jars were observed with information labels containing sample number, collection month/day/year and time, project number, sampler's initials, analysis to be performed and location as specified within the project SAP (Figure 3). Prior to loading up the samples within a shipping cooler, a loose contamination survey was performed (Figure 4) and documented (Figure 5). With all loose survey values being less than the minimal detectable activity for the instrument, sample packaging was started by applying the appropriate air bill (Figure 6) and DOT shipping classification (Figure 7) to the pre-lined shipping cooler. Ziplok bagged sample jars were placed within the inner cooler bag (Figure 8) and the Sample Shipment Checklist was completed by the RCT (Figure 9). Peer review was conducted by another APTIM RCT (Figure 10) responsible for transferring the shipment to Fedex. Once completed with reviewing, the reviewed signed the Sample Shipment Checklist and took possession of the samples via the Chain of Custody (Figures 10 through 13).

All applicable surveillance checklist requirements were observed performed adequately during this surveillance.

**Describe any contractor deficient conditions observed with reference:**

1)

2)

3)

**Recommendations, Process Improvements, or Suggestions:**

**Battelle Project Signatories**

X Adam Berry, RRPT

Battelle Quality Assurance Field Team Member

## Surveillance Figures For HPNS-QAR-2020-0149

Figure 1. RSY-4 Pad E-14, Use 2 systematic samples

## Surveillance Figures Continued


Figure 2. Sampler initials and date on tamper evident tape used on sample jar lid

## Surveillance Figures Continued

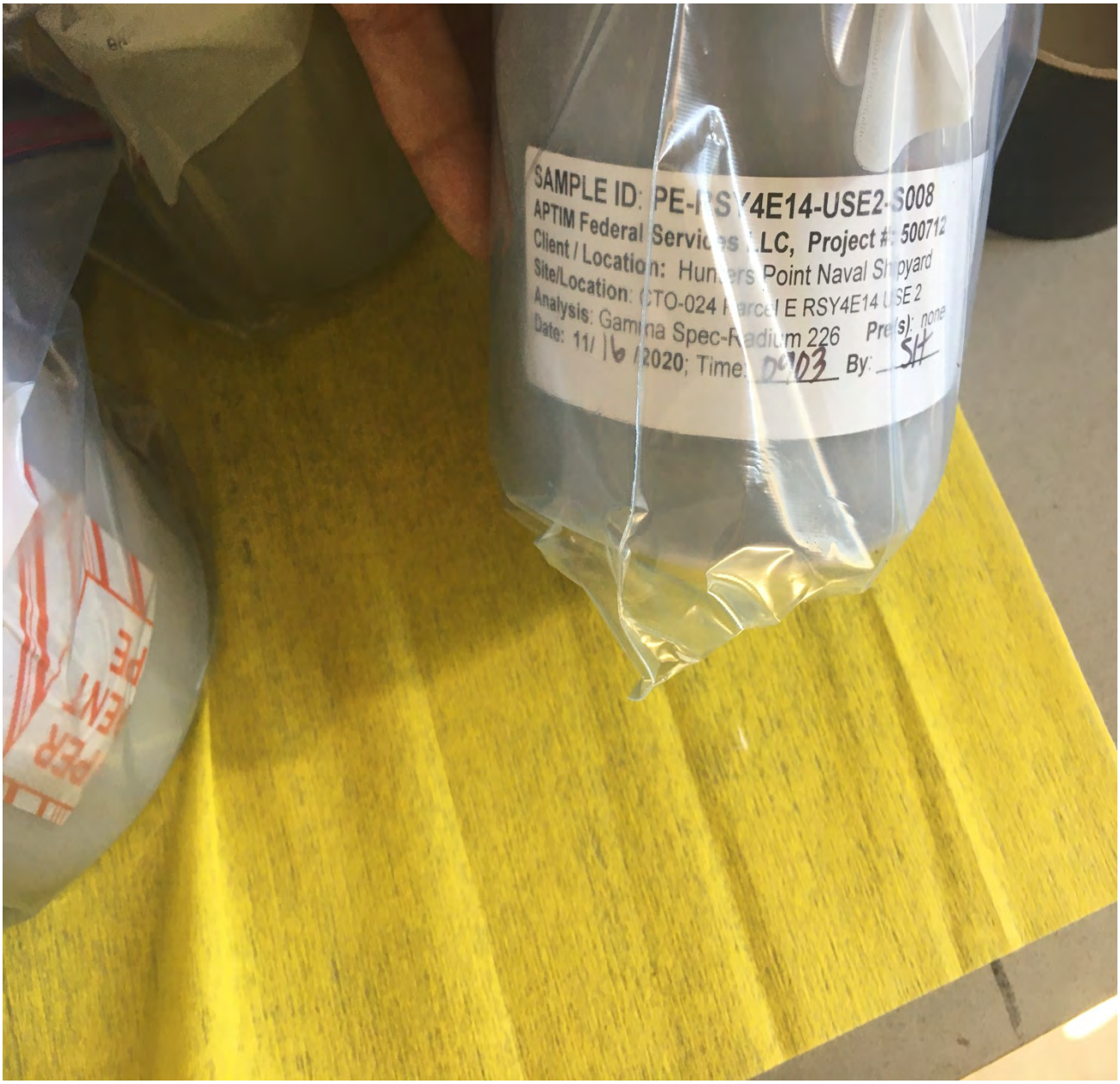
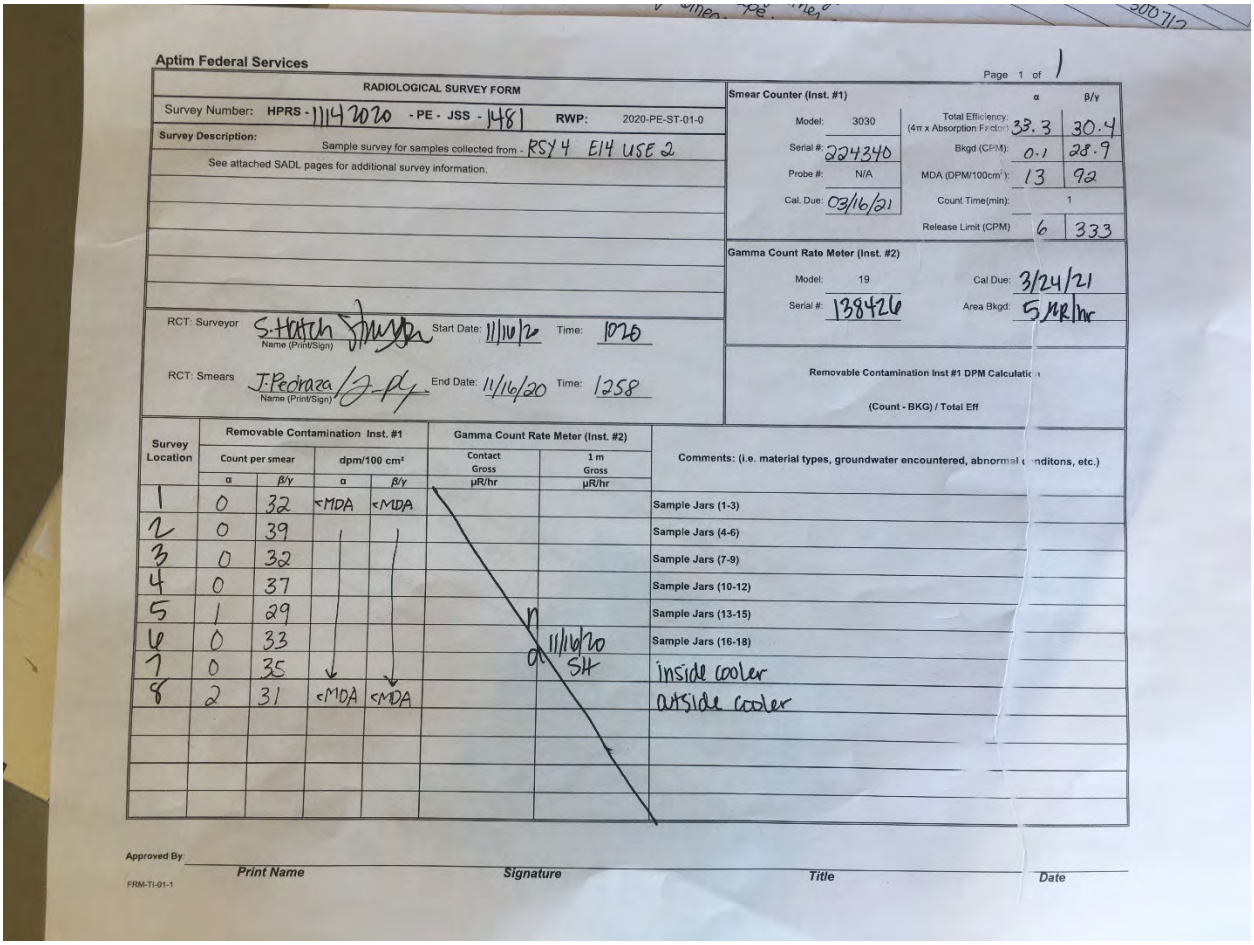



Figure 3. Sample jar information label contains SAP required information

## Surveillance Figures Continued


Figure 4. RCT performing loose contamination swipe survey prior to final packaging

## Surveillance Figures Continued



Aptim Federal Services

Page 1 of 1

RADIOLOGICAL SURVEY FORM

Survey Number: HPRS - 1114 2020 - PE - JSS - 1481 RWP: 2020-PE-ST-01-0

Survey Description: Sample survey for samples collected from - RSY 4 E14 USE 2

See attached SADL pages for additional survey information.

RCT: Surveyor S. Hatch Name (Print/Sign) Start Date: 11/16/20 Time: 1020

RCT: Smears J. Pedraza Name (Print/Sign) End Date: 11/16/20 Time: 1258

Smear Counter (Inst. #1)

| | | α | β/γ |
|---|---|---|---|
| Model: 3030 | Total Efficiency (4π x Absorption Factor): | 33.3 | 30.4 |
| Serial #: 224340 | Bkgd (CPM): | 0.1 | 28.9 |
| Probe #: N/A | MDA (DPM/100cm²): | 13 | 92 |
| Cal. Due: 03/16/21 | Count Time(min): | 1 | |
| | Release Limit (CPM) | 6 | 333 |

Gamma Count Rate Meter (Inst. #2)

Model: 19 Cal Due: 3/24/21

Serial #: 138426 Area Bkgd: 5 μR/hr

Removable Contamination Inst #1 DPM Calculation

(Count - BKG) / Total Eff

| Survey Location | Removable Contamination Inst. #1 Count per smear α | Count per smear β/γ | dpm/100 cm² α | dpm/100 cm² β/γ | Gamma Count Rate Meter (Inst. #2) Contact Gross μR/hr | 1 m Gross μR/hr | Comments: (i.e. material types, groundwater encountered, abnormal conditons, etc.) |
|---|---|---|---|---|---|---|---|
| 1 | 0 | 32 | <MDA | <MDA | | | Sample Jars (1-3) |
| 2 | 0 | 39 | | | | | Sample Jars (4-6) |
| 3 | 0 | 32 | | | | | Sample Jars (7-9) |
| 4 | 0 | 37 | | | | | Sample Jars (10-12) |
| 5 | 1 | 29 | | | | | Sample Jars (13-15) |
| 6 | 0 | 33 | | | | | Sample Jars (16-18) |
| 7 | 0 | 35 | | | | | inside cooler |
| 8 | 2 | 31 | <MDA | <MDA | | | outside cooler |

11/16/20 SH

Approved By: Print Name Signature Title Date

FRM-TI-01-1

Figure 5. E-14, Use 2 completed loose contamination survey

## Surveillance Figures Continued

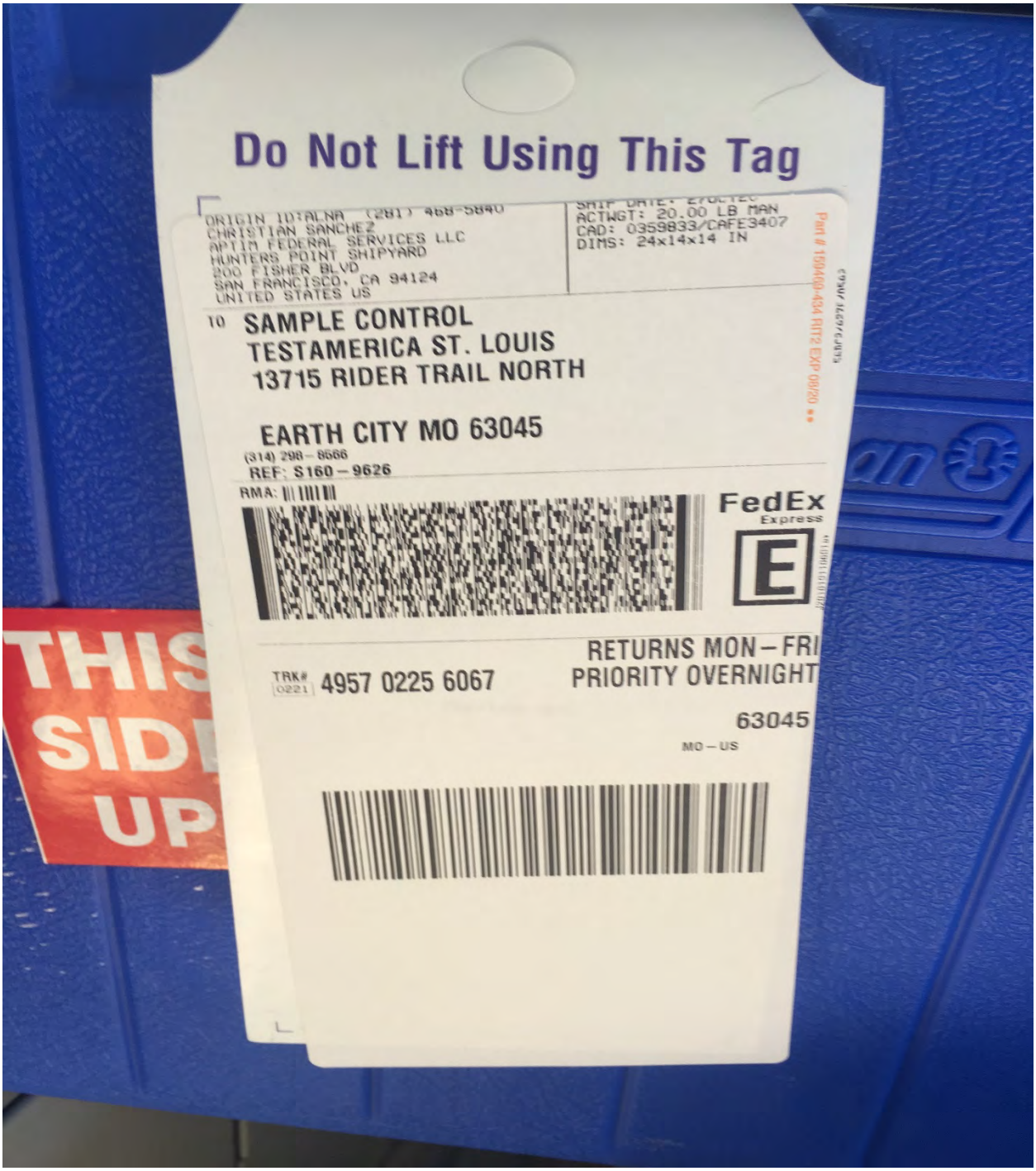



Figure 6. Lab bound cooler air bill

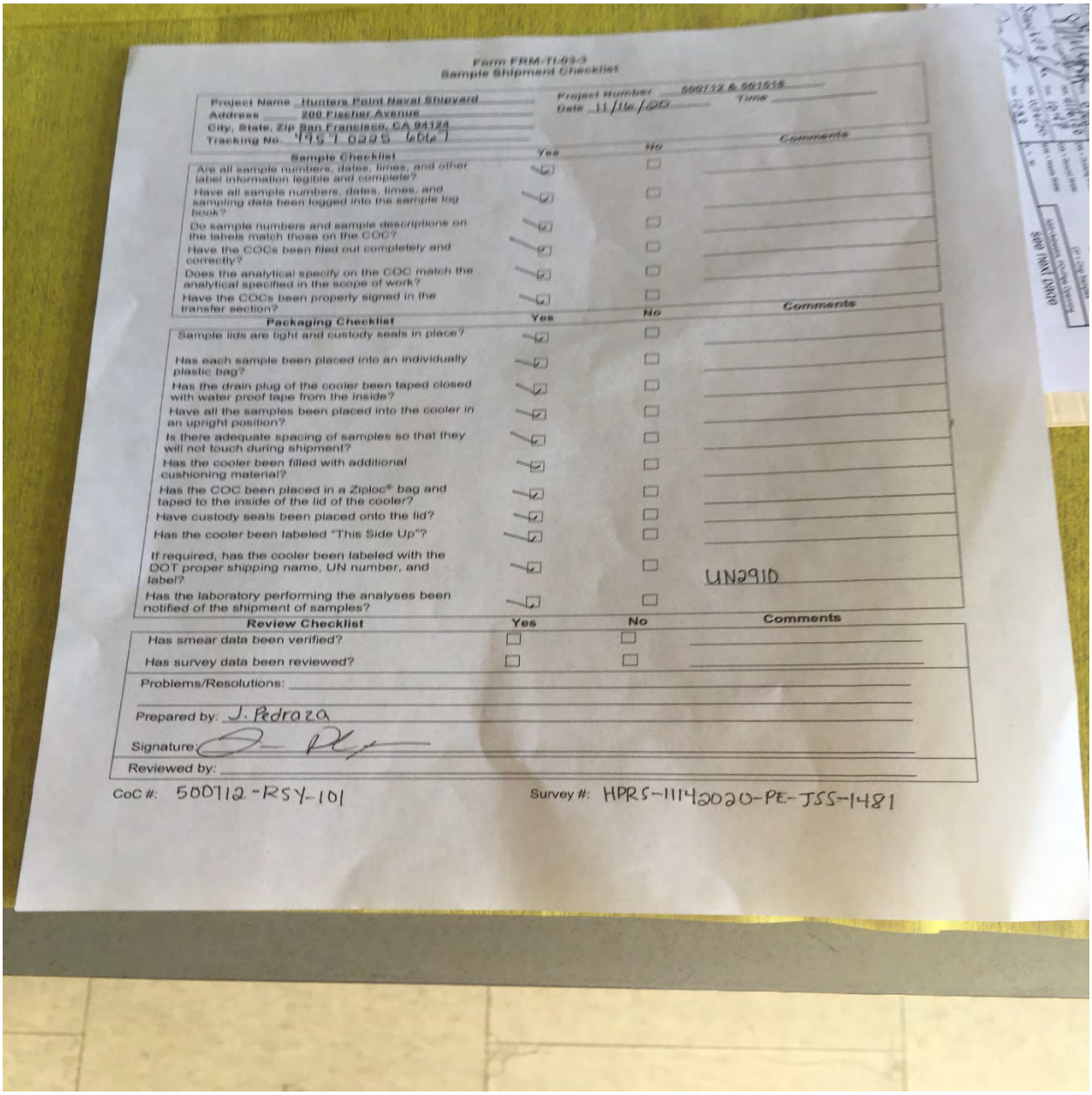
## Surveillance Figures Continued


Figure 7. Propper shipping placard/label applied

## Surveillance Figures Continued


Figure 8. Samples getting loaded into cooler.

## Surveillance Figures Continued



Form FRM-TI-03-3
Sample Shipment Checklist

Project Name: Hunters Point Naval Shipyard
Address: 200 Fischer Avenue
City, State, Zip: San Francisco, CA 94124
Tracking No: 4951 0995 6067
Project Number: 500712 & 501518
Date: 11/16/20
Time:

| Sample Checklist | Yes | No | Comments |
|---|---|---|---|
| Are all sample numbers, dates, times, and other label information legible and complete? | ☑ | ☐ | |
| Have all sample numbers, dates, times, and sampling data been logged into the sample log book? | ☑ | ☐ | |
| Do sample numbers and sample descriptions on the labels match those on the COC? | ☑ | ☐ | |
| Have the COCs been filed out completely and correctly? | ☑ | ☐ | |
| Does the analytical specify on the COC match the analytical specified in the scope of work? | ☑ | ☐ | |
| Have the COCs been properly signed in the transfer section? | ☑ | ☐ | |

| Packaging Checklist | Yes | No | Comments |
|---|---|---|---|
| Sample lids are tight and custody seals in place? | ☑ | ☐ | |
| Has each sample been placed into an individually plastic bag? | ☑ | ☐ | |
| Has the drain plug of the cooler been taped closed with water proof tape from the inside? | ☑ | ☐ | |
| Have all the samples been placed into the cooler in an upright position? | ☑ | ☐ | |
| Is there adequate spacing of samples so that they will not touch during shipment? | ☑ | ☐ | |
| Has the cooler been filled with additional cushioning material? | ☑ | ☐ | |
| Has the COC been placed in a Ziploc® bag and taped to the inside of the lid of the cooler? | ☑ | ☐ | |
| Have custody seals been placed onto the lid? | ☑ | ☐ | |
| Has the cooler been labeled "This Side Up"? | ☑ | ☐ | |
| If required, has the cooler been labeled with the DOT proper shipping name, UN number, and label? | ☑ | ☐ | UN2910 |
| Has the laboratory performing the analyses been notified of the shipment of samples? | ☑ | ☐ | |

| Review Checklist | Yes | No | Comments |
|---|---|---|---|
| Has smear data been verified? | ☐ | ☐ | |
| Has survey data been reviewed? | ☐ | ☐ | |

Problems/Resolutions:
Prepared by: J. Pedraza
Signature:
Reviewed by:

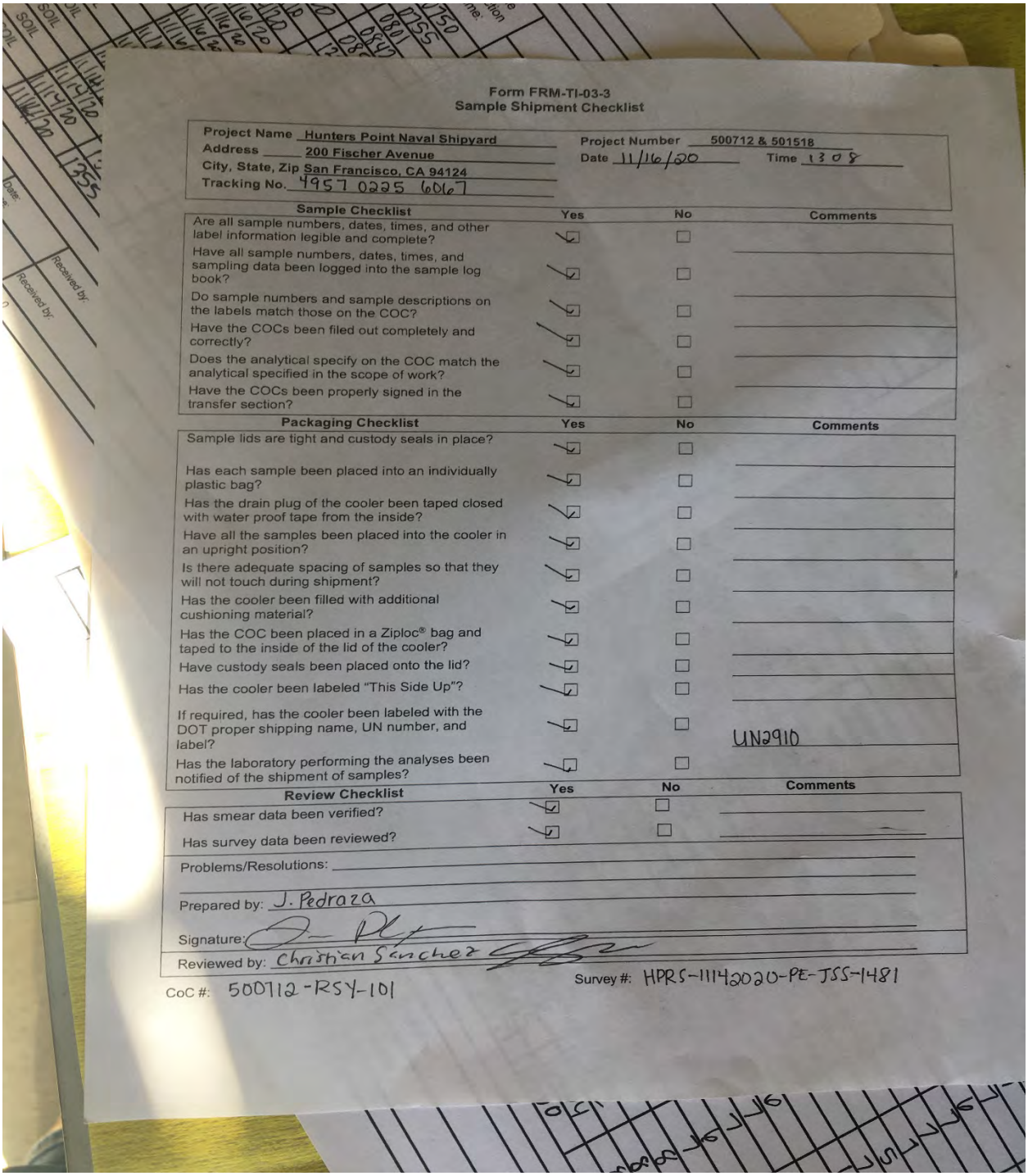
CoC #: 500712-RSY-101
Survey #: HPRS-11142020-PE-JSS-1481

Figure 9. Completed Sample Shipment Checklist

## Surveillance Figures Continued


Figure 10. Peer review of sample shipment package

## Surveillance Figures Continued



Form FRM-TI-03-3
Sample Shipment Checklist

Project Name Hunters Point Naval Shipyard
Address 200 Fischer Avenue
City, State, Zip San Francisco, CA 94124
Tracking No. 4957 0225 6067
Project Number 500712 & 501518
Date 11/16/20 Time 1308

| Sample Checklist | Yes | No | Comments |
|---|---|---|---|
| Are all sample numbers, dates, times, and other label information legible and complete? | ☑ | ☐ | |
| Have all sample numbers, dates, times, and sampling data been logged into the sample log book? | ☑ | ☐ | |
| Do sample numbers and sample descriptions on the labels match those on the COC? | ☑ | ☐ | |
| Have the COCs been filed out completely and correctly? | ☑ | ☐ | |
| Does the analytical specify on the COC match the analytical specified in the scope of work? | ☑ | ☐ | |
| Have the COCs been properly signed in the transfer section? | ☑ | ☐ | |

| Packaging Checklist | Yes | No | Comments |
|---|---|---|---|
| Sample lids are tight and custody seals in place? | ☑ | ☐ | |
| Has each sample been placed into an individually plastic bag? | ☑ | ☐ | |
| Has the drain plug of the cooler been taped closed with water proof tape from the inside? | ☑ | ☐ | |
| Have all the samples been placed into the cooler in an upright position? | ☑ | ☐ | |
| Is there adequate spacing of samples so that they will not touch during shipment? | ☑ | ☐ | |
| Has the cooler been filled with additional cushioning material? | ☑ | ☐ | |
| Has the COC been placed in a Ziploc® bag and taped to the inside of the lid of the cooler? | ☑ | ☐ | |
| Have custody seals been placed onto the lid? | ☑ | ☐ | |
| Has the cooler been labeled "This Side Up"? | ☑ | ☐ | |
| If required, has the cooler been labeled with the DOT proper shipping name, UN number, and label? | ☑ | ☐ | UN2910 |
| Has the laboratory performing the analyses been notified of the shipment of samples? | ☑ | ☐ | |

| Review Checklist | Yes | No | Comments |
|---|---|---|---|
| Has smear data been verified? | ☑ | ☐ | |
| Has survey data been reviewed? | ☑ | ☐ | |

Problems/Resolutions:

Prepared by: J. Pedraza

Signature:

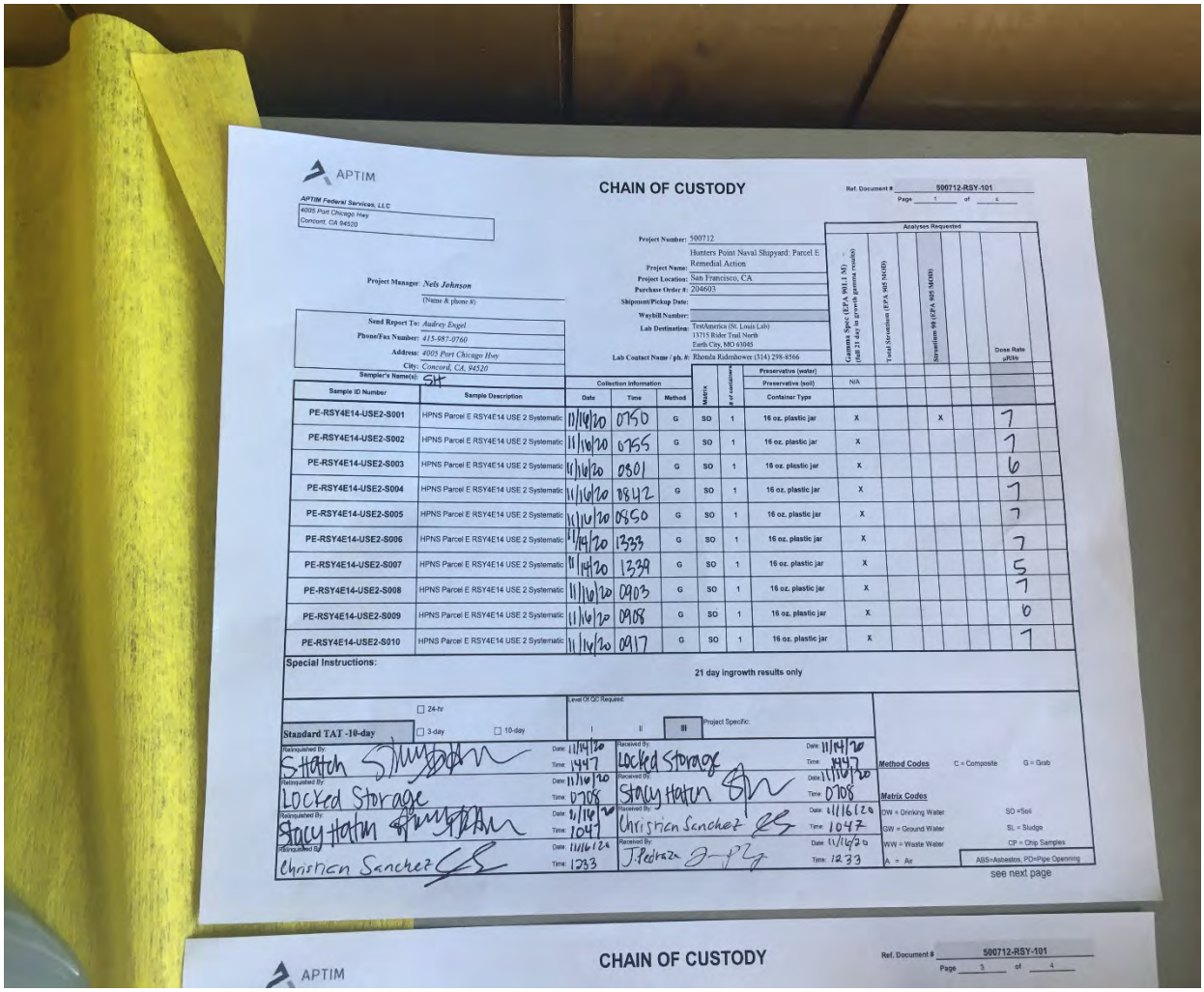
Reviewed by: Christian Sanchez

CoC #: 500712-RSY-101

Survey #: HPRS-11142020-PE-JSS-1481

Figure 10. Peer evaluator signature on checklist after review

## Surveillance Figures Continued



APTIM

APTIM Federal Services, LLC
4005 Port Chicago Hwy
Concord, CA 94520

CHAIN OF CUSTODY

Ref. Document # 500712-RSY-101
Page 1 of 4

Project Manager: Nels Johnson
(Name & phone #)

Send Report To: Audrey Engel
Phone/Fax Number: 415-987-0760
Address: 4005 Port Chicago Hwy
City: Concord, CA 94520
Sampler's Name(s): SH

Project Number: 500712
Project Name: Hunters Point Naval Shipyard: Parcel E Remedial Action
Project Location: San Francisco, CA
Purchase Order #: 204603
Shipment/Pickup Date:
Waybill Number:
Lab Destination: TestAmerica (St. Louis Lab) 13715 Rider Trail North Earth City, MO 63045
Lab Contact Name / ph. #: Rhonda Ridenhower (314) 298-8566

Analyses Requested: Gamma Spec (EPA 901.1 SI) (list 21 day in-growth results); Total Strontium (EPA 905.0(M)); Strontium 90 (EPA 905.0(M)); Dose Rate µR/hr

| Sample ID Number | Sample Description | Collection Information: Date | Time | Method | Matrix | # of containers | Preservative (water) / Preservative (soil) / Container Type | Gamma Spec | Total Strontium | Strontium 90 | Dose Rate µR/hr |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PE-RSY4E14-USE2-S001 | HPNS Parcel E RSY4E14 USE 2 Systematic | 11/14/20 | 0750 | G | SO | 1 | N/A / 16 oz. plastic jar | X | | X | 7 |
| PE-RSY4E14-USE2-S002 | HPNS Parcel E RSY4E14 USE 2 Systematic | 11/16/20 | 0755 | G | SO | 1 | 16 oz. plastic jar | X | | | 7 |
| PE-RSY4E14-USE2-S003 | HPNS Parcel E RSY4E14 USE 2 Systematic | 11/16/20 | 0801 | G | SO | 1 | 16 oz. plastic jar | X | | | 6 |
| PE-RSY4E14-USE2-S004 | HPNS Parcel E RSY4E14 USE 2 Systematic | 11/16/20 | 0842 | G | SO | 1 | 16 oz. plastic jar | X | | | 7 |
| PE-RSY4E14-USE2-S005 | HPNS Parcel E RSY4E14 USE 2 Systematic | 11/16/20 | 0850 | G | SO | 1 | 16 oz. plastic jar | X | | | 7 |
| PE-RSY4E14-USE2-S006 | HPNS Parcel E RSY4E14 USE 2 Systematic | 11/14/20 | 1333 | G | SO | 1 | 16 oz. plastic jar | X | | | 7 |
| PE-RSY4E14-USE2-S007 | HPNS Parcel E RSY4E14 USE 2 Systematic | 11/14/20 | 1339 | G | SO | 1 | 16 oz. plastic jar | X | | | 5 |
| PE-RSY4E14-USE2-S008 | HPNS Parcel E RSY4E14 USE 2 Systematic | 11/16/20 | 0903 | G | SO | 1 | 16 oz. plastic jar | X | | | 7 |
| PE-RSY4E14-USE2-S009 | HPNS Parcel E RSY4E14 USE 2 Systematic | 11/16/20 | 0908 | G | SO | 1 | 16 oz. plastic jar | X | | | 6 |
| PE-RSY4E14-USE2-S010 | HPNS Parcel E RSY4E14 USE 2 Systematic | 11/16/20 | 0917 | G | SO | 1 | 16 oz. plastic jar | X | | | 7 |

Special Instructions: 21 day ingrowth results only

Standard TAT -10-day ☐ 24-hr ☐ 3-day ☐ 10-day

Level Of QC Required: I II III Project Specific:

| Relinquished By | Date | Time | Received By | Date | Time |
|---|---|---|---|---|---|
| S Hatch | 11/14/20 | 1447 | Locked Storage | 11/14/20 | 1447 |
| Locked Storage | 11/16/20 | 0708 | Stacy Hatch | 11/16/20 | 0708 |
| Stacy Hatch | 11/16/20 | 1047 | Christian Sanchez | 11/16/20 | 1047 |
| Christian Sanchez | 11/16/20 | 1233 | J. Pedraza | 11/16/20 | 1233 |

Method Codes: C = Composite G = Grab

Matrix Codes: DW = Drinking Water; GW = Ground Water; WW = Waste Water; A = Air; SO = Soil; SL = Sludge; CP = Chip Samples; ABS=Asbestos, PD=Pipe Openning

see next page

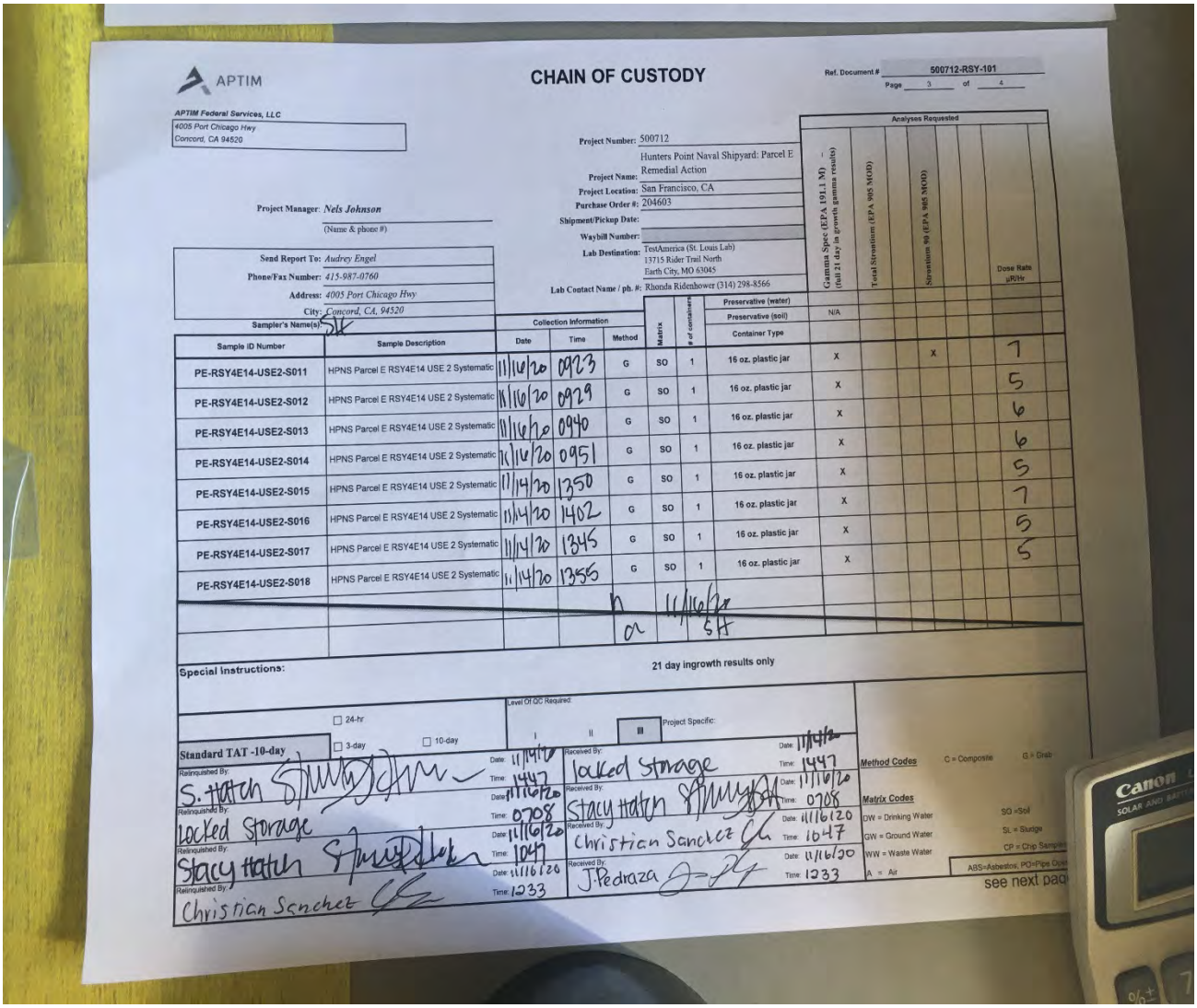
APTIM

CHAIN OF CUSTODY

Ref. Document # 500712-RSY-101
Page 3 of 4

Figure 11. RSY-4, E-14, Use 2 COC Page 1 of 3

## Surveillance Figures Continued



APTIM

**CHAIN OF CUSTODY**

Ref. Document # 500712-RSY-101 Page 3 of 4

APTIM Federal Services, LLC
4005 Port Chicago Hwy
Concord, CA 94520

Project Manager: Nels Johnson (Name & phone #)

Send Report To: Audrey Engel
Phone/Fax Number: 415-987-0760
Address: 4005 Port Chicago Hwy
City: Concord, CA, 94520
Sampler's Name(s): SK

Project Number: 500712
Project Name: Hunters Point Naval Shipyard: Parcel E Remedial Action
Project Location: San Francisco, CA
Purchase Order #: 204603
Shipment/Pickup Date:
Waybill Number:
Lab Destination: TestAmerica (St. Louis Lab) 13715 Rider Trail North Earth City, MO 63045
Lab Contact Name / ph. #: Rhonda Ridenhower (314) 298-8566

| Sample ID Number | Sample Description | Collection Information: Date | Time | Method | Matrix | # of containers | Preservative (water) / Preservative (soil) / Container Type | Analyses Requested: Gamma Spec (EPA 19.1.1 M) (full 21 day in growth gamma results) | Total Strontium (EPA 905 MOD) | Strontium 90 (EPA 905 MOD) | Dose Rate µR/Hr |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PE-RSY4E14-USE2-S011 | HPNS Parcel E RSY4E14 USE 2 Systematic | 11/16/20 | 0923 | G | SO | 1 | 16 oz. plastic jar | X | | X | 7 |
| PE-RSY4E14-USE2-S012 | HPNS Parcel E RSY4E14 USE 2 Systematic | 11/16/20 | 0929 | G | SO | 1 | 16 oz. plastic jar | X | | | 5 |
| PE-RSY4E14-USE2-S013 | HPNS Parcel E RSY4E14 USE 2 Systematic | 11/16/20 | 0940 | G | SO | 1 | 16 oz. plastic jar | X | | | 6 |
| PE-RSY4E14-USE2-S014 | HPNS Parcel E RSY4E14 USE 2 Systematic | 11/16/20 | 0951 | G | SO | 1 | 16 oz. plastic jar | X | | | 6 |
| PE-RSY4E14-USE2-S015 | HPNS Parcel E RSY4E14 USE 2 Systematic | 11/14/20 | 1350 | G | SO | 1 | 16 oz. plastic jar | X | | | 5 |
| PE-RSY4E14-USE2-S016 | HPNS Parcel E RSY4E14 USE 2 Systematic | 11/14/20 | 1402 | G | SO | 1 | 16 oz. plastic jar | X | | | 7 |
| PE-RSY4E14-USE2-S017 | HPNS Parcel E RSY4E14 USE 2 Systematic | 11/14/20 | 1345 | G | SO | 1 | 16 oz. plastic jar | X | | | 5 |
| PE-RSY4E14-USE2-S018 | HPNS Parcel E RSY4E14 USE 2 Systematic | 11/14/20 | 1355 | G | SO | 1 | 16 oz. plastic jar | X | | | 5 |

Special instructions: 21 day ingrowth results only

☐ 24-hr ☐ 3-day ☐ 10-day Standard TAT -10-day

Level Of QC Required: I II III Project Specific:

Relinquished By: S. Hatch Date: 11/14/20 Time: 1447
Received By: locked storage Date: 11/14/20 Time: 1447
Relinquished By: Locked Storage Date: 11/16/20 Time: 0708
Received By: Stacy Hatch Date: 11/16/20 Time: 0708
Relinquished By: Stacy Hatch Date: 11/16/20 Time: 1047
Received By: Christian Sanchez Date: 11/16/20 Time: 1047
Relinquished By: Christian Sanchez Date: 11/16/20 Time: 1233
Received By: J. Pedraza Date: 11/16/20 Time: 1233

Method Codes: C = Composite G = Grab
Matrix Codes: DW = Drinking Water, GW = Ground Water, WW = Waste Water, A = Air, SO = Soil, SL = Sludge, CP = Chip Sample
ABS=Asbestos, PCI=Pipe Cond

see next pag

Figure 12. RSY-4, E-14, Use 2 COC Page 2 of 3

## Surveillance Figures Continued

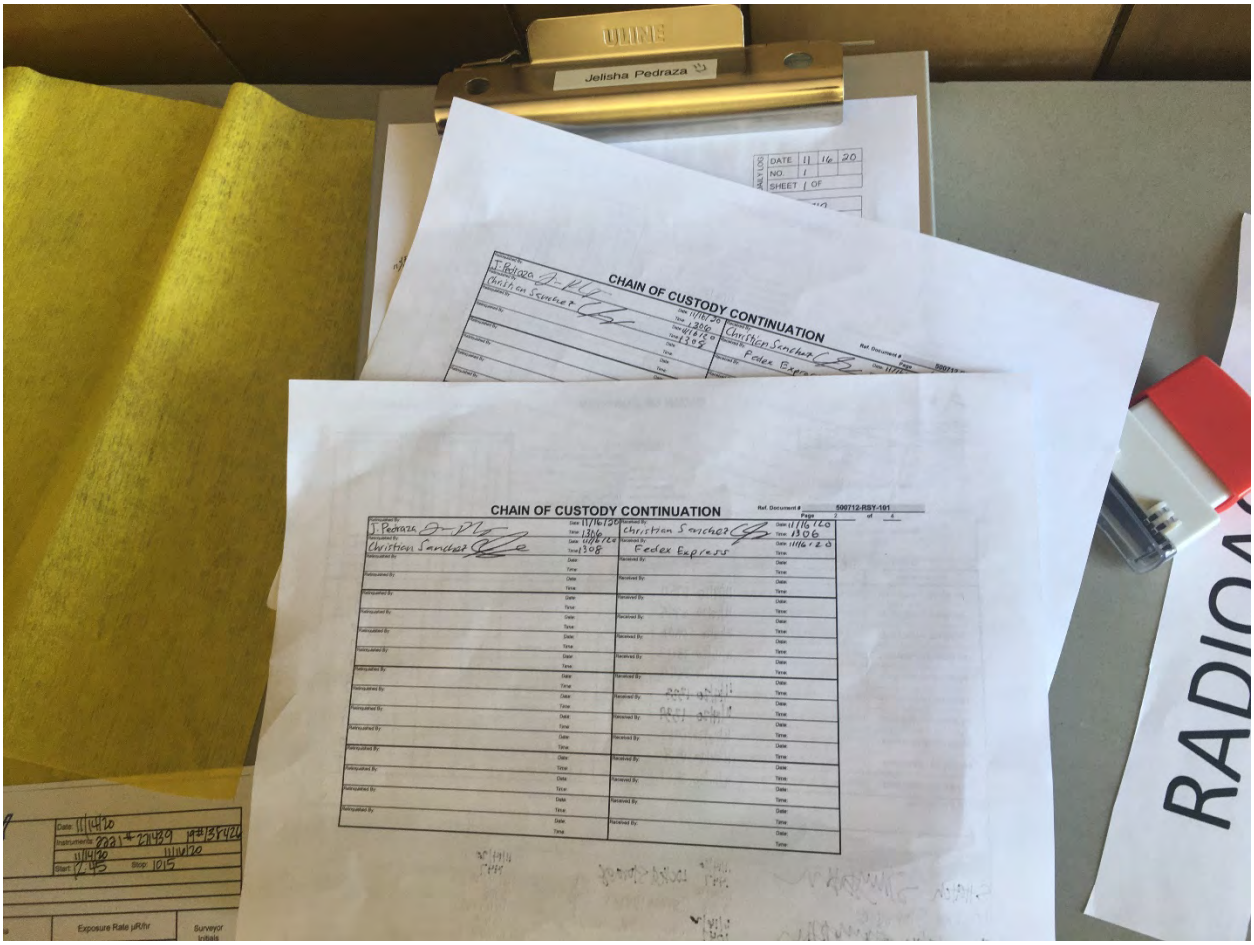



Figure 13. RSY-4, E-14, Use 2 COC continuation pages 3 of 3

*Battelle QA Form - APTIM Parcel E Phases 1/3 Soil Sampling*

| | | | |
|---|---|---|---|
| **Date/Time:** | 11/16/2020 12:36 - 12:09 | **QA Inspector:** | Berry, Adam |
| **Contractor/Survey #:** | APTIM Parcel E Phases 1/3 | **Surveillance #** | HPNS-QAS-2020-0149 |
| **Equipment surveyed:** | None | **Work area:** | Parcel C / APTIM Trailer |

| *Requirement* | *Comments* | *Yes/No/NA* |
|---|---|---|
| **A Radiological Work Permit (RWP) has been prepared and approved for sampling** | None | Yes |
| **The contractor RCT will record a background measurement with all survey instruments being used in an area representative of the area to be surveyed, but unlikely to be impacted by contamination. This data will be recorded into a notebook for later transfer on a Sampling Survey Form (CMS-710-07-FM-40125)** | None- not observed | N/A |
| **Prior to conducting soil sampling a gamma walk-over and static survey will have been conducted** | None | Yes |
| **Required personal protective equipment and dosimetry in accordance with the RWP will be available and used during soil sampling** | None | Yes |
| **Employees performing field sampling activities have been trained to CMS-710-07-WI-40123, Revision 0, 18-Feb-2016 ,and have met the training requirements, and have read and understood the RWP and/or site-specific procedures for the specific work.** | J. Pedraza was last trained during 2020 | Yes |
| **All sampling will be conducted with clean or new equipment** | Not performed during this surveillance | N/A |
| **With an issued map of the sampling locations the sampler will locate the starting point (0.0 Northing, 0.0 Easting) of the survey grid using GPS or hand measurements.** | None | N/A |
| **Locate the sample locations and set a pin flag or other semi-permanent marker to identify the sample location or sample number.** | None | N/A |
| **Protect all sampling containers and paperwork from contamination by staging these items on plastic sheeting or similar. Don a pair of new gloves and change out used gloves after each sample location and as needed. Dispose of used gloves in designated radioactive waste recepticle.** | None | N/A |
| **Prior to collecting the soil sample,the sampler will remove any surface debris (e.g., vegetation, rocks, twigs) from the sample location.** | Not observed during surveillance | N/A |
| **Sample collection should be performed with either a clean T-handled sample auger, shovel, trowel, or scoop.** | Not observed during surveillance | N/A |
| **The sampler shall measure the depth of the sample bottom with a measure stick or tape measure and make note of the resulting depth when writing the Sampling Survey Form of equivalent** | Not observed during surveillance | N/A |
| **Soil samples will be placed into a bowl or bag and rocks or other debris will be removed. The sample will then be homogenized by stirring/mixing** | Not observed during surveillance | N/A |
| **Transfer the soil sample into the container specified in the project-specific SAP, receiving laboratory, or PRSO. If a split sample is required, evenly divide sample between containers** | Not observed during surveillance | N/A |

| | | |
|---|---|---|
| **Sample containers will be closed, labeled, documentation completed, tamper tape applied, placed in resealable plastic bag, and placed into a sample collection cooler.** | Photographed | Yes |
| **Each sample label will contain:**<br>**• Sample identification number**<br>**• Sample collection date (month/day/year)**<br>**• Time of collection (24-hour clock)**<br>**• Project number**<br>**• Sampler's initials**<br>**• Analyses to be performed**<br>**• Preservation (if any)**<br>**• Location (i.e., site name)** | Photographed | Yes |
| **Prior to shipping samples the sampler will complete CMS-710-07-FM-40127, "Sample Shipment Checklist" or equivalent.** | Photographed | Yes |
| **Any excess soil will be placed back in the hole at the sample location.** | Not observed during surveillnace | N/A |
| **Sampling equipment will be decontaminated if neccesary or replaced with new equipment prior to collecting any sucessive samples** | Not observed during surveillance | N/A |
| **Chain of Custody (COC) will be used to provide custody exchange record for the samples. The Chain of Custody Form also serves as a formal request for sample analyses.** | Photographed | Yes |
| **If a commercial carrier is used, the Chain of Custody Form will include the air bill number in the "Transfers Accepted By" column, and will be sealed in a resealable bag. The Chain of Custody Form will then be taped to the inside of the sample cooler lid.** | Photographed | Yes |

References: "Final Radiation Protection Plan Parcel E Remedial Action-Phase 1 and Phase 3" December 2018
APTIM Work Instruction AMS-710-07-WI-40123 "Sample Collection for Radiological Analysis", July 30 2017

| | | | |
|---|---|---|---|
| **Signature:** | Adam Berry, RRPT | **Date:** | 11/16/2020 |

Battelle QA Form - APTIM Parcel E Phases 1/3 Soil Sampling

| | | | |
|---|---|---|---|
| Date/Time: | 11/16/20 12:36 - 1309 | QA Inspector: | Berry, Adam |
| Contractor/Survey #: | Aptim Phases 1/3 | Surveillance # | HDWS-EAS-2020-0149 |
| Equipment surveyed: | None | Work area: | Parcel C / Aptim trailer |

| Requirement | Comments | Yes/No/NA |
|---|---|---|
| A Radiological Work Permit (RWP) has been prepared and approved for sampling | None | yes |
| The contractor RCT will record a background measurement with all survey instruments being used in an area representative of the area to be surveyed, but unlikely to be impacted by contamination. This data will be recorded into a notebook for later transfer on a Sampling Survey Form (CMS-710-07-FM-40125) | None - not observed | N/A |
| Prior to conducting soil sampling a gamma walk-over and static survey will have been conducted | Not observed | N/A |
| Required personal protective equipment and dosimetry in accordance with the RWP will be available and used during soil sampling | None | yes |
| Employees performing field sampling activities have been trained to CMS-710-07-WI-40123, Revision 0, 18-Feb-2016 ,and have met the training requirements, and have read and understood the RWP and/or site-specific procedures for the specific work. | J. Pedraza trained in 2020 | yes |
| All sampling will be conducted with clean or new equipment | Not observed | N/A |
| With an issued map of the sampling locations the sampler will locate the starting point (0.0 Northing, 0.0 Easting) of the survey grid using GPS or hand measurements. | None | N/A |
| Locate the sample locations and set a pin flag or other semi-permanent marker to identify the sample location or sample number. | None | N/A |
| Protect all sampling containers and paperwork from contamination by staging these items on plastic sheeting or similar. Don a pair of new gloves and change out used gloves after each sample location and as needed. Dispose of used gloves in designated radioactive waste recepticle. | None | yes |
| Prior to collecting the soil sample,the sampler will remove any surface debris (e.g., vegetation, rocks, twigs) from the sample location. | Not observed | N/A |
| Sample collection should be performed with either a clean T-handled sample auger, shovel, trowel, or scoop. | Not observed | N/A |
| The sampler shall measure the depth of the sample bottom with a measure stick or tape measure and make note of the resulting depth when writing the Sampling Survey Form of equivalent | Not observed | N/A |
| Soil samples will be placed into a bowl or bag and rocks or other debris will be removed. The sample will then be homogenized by stirring/mixing | Not observed | N/A |
| Transfer the soil sample into the container specified in the project-specific SAP, receiving laboratory, or PRSO. If a split sample is required, evenly divide sample between containers | Not observed | N/A |

| | | |
|---|---|---|
| Sample containers will be closed, labeled, documentation completed, tamper tape applied, placed in resealable plastic bag, and placed into a sample collection cooler. | Photographed | yes |
| Each sample label will contain:<br>• Sample identification number<br>• Sample collection date (month/day/year)<br>• Time of collection (24-hour clock)<br>• Project number<br>• Sampler's initials<br>• Analyses to be performed<br>• Preservation (if any) None<br>• Location (i.e., site name) | Photographed | yes |
| Prior to shipping samples the sampler will complete CMS-710-07-FM-40127, "Sample Shipment Checklist" or equivalent. | Photographed | yes |
| Any excess soil will be placed back in the hole at the sample location. | Not observed | N/A |
| Sampling equipment will be decontaminated if neccesary or replaced with new equipment prior to collecting any sucessive samples | Not observed | N/A |
| Chain of Custody (COC) will be used to provide custody exchange record for the samples. The Chain of Custody Form also serves as a formal request for sample analyses. | Photographed | yes |
| If a commercial carrier is used, the Chain of Custody Form will include the air bill number in the "Transfers Accepted By" column, and will be sealed in a resealable bag. The Chain of Custody Form will then be taped to the inside of the sample cooler lid. | Photographed | yes |

References: "Final Radiation Protection Plan Parcel E Remedial Action-Phase 1 and Phase 3" December 2018
APTIM Work Instruction AMS-710-07-WI-40123 "Sample Collection for Radiological Analysis", July 30 2017

| Signature: | | Date: | 11/16/2020 |
|---|---|---|---|

64°F Slight Overcast
RSY-4 E-14, use 2

# Quality Assurance Surveillance Report

Surveillance Checklist Number(s) HPNS-QAS-2020-0150 Surveillance Date 11/18/2020

Surveillance Report Number HPNS-QAR-2020-0150 Surveillance Report Generation Date 11/18/2020

Number of Surveillance Photographs Taken 8

**Describe the work event, contractor, site location, date and weather:**

This surveillance observed soil sampling performed by APTIM. Approximately 20 minutes of APTIM staff time was taken to accommodate this surveillance. The weather was 57°F and cloudy.

**Describe what was observed:**

The Battelle QA team arrived at Parcel G to observe soil sampling on RSY Pad #12 Use 1 with soil originating from Trench Unit 99 Sidewall Floor Unit (TU-99 SFU). The 25 systematic sample locations were first identified using a GPS unit (Figure 1). Another RCT then collected a gamma static and exposure rate measurement at each sample location (Figure 2). The Ludlum 2221 w/44-20 and Model 19 instruments were verified to be within the calibration window (Figures 3 and 4). A RCT then loosened the soil at each sample location with a rotary hammer. The rotary hammer was decontaminated in between sample locations and surveyed using a Ludlum 2360 w/43-93 instrument (Figure 5). The soils were removed from each sample location and then transferred to 500 mL plastic containers. A split sample at sample location #2 was provided to the EPA representative (Figure 6). Once a RCT documented the soil collection with a tablet, the sample containers were closed and tamper tape was applied (Figure 7). A Sample Activity Daily Log was used to document the date and time of sample collection and all associated exposure rates and gamma static measurements (Figure 8).

Note: Soil sampling was performed prior to completion of the static follow up survey due to rain the previous day saturating the soil with water. The PRSO authorized this soil sampling event.

All observed aspects of APTIM's soil sampling were in compliance with all approved work documentation.

**Describe any contractor deficient conditions observed with reference:**

None

**Recommendations, Process Improvements, or Suggestions:**

None

**Battelle Project Signatories**

X

Minhsec Chi
Battelle QA Radiation Safety Specialist

## Surveillance Photographs HPNS-QAR-2020-0150

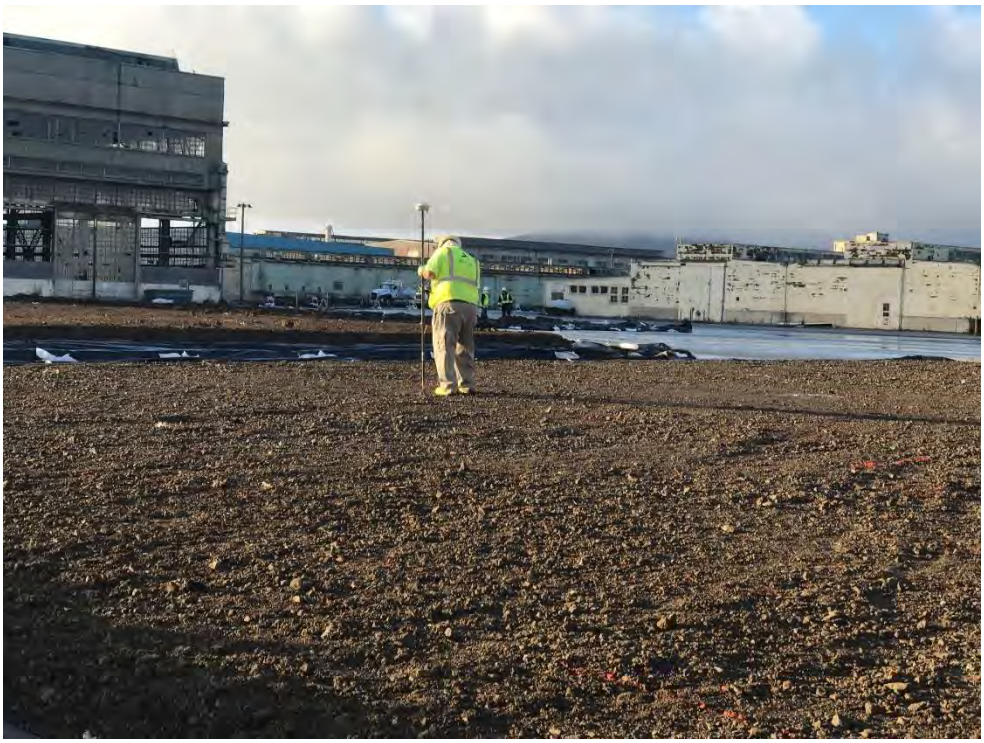


Figure 1 – RCT identifying sample locations with a GPS unit

Figure 2 – RCT performing a gamma static and exposure rate above a sample location

## Surveillance Photographs HPNS-QAR-2020-0150 (Continued)

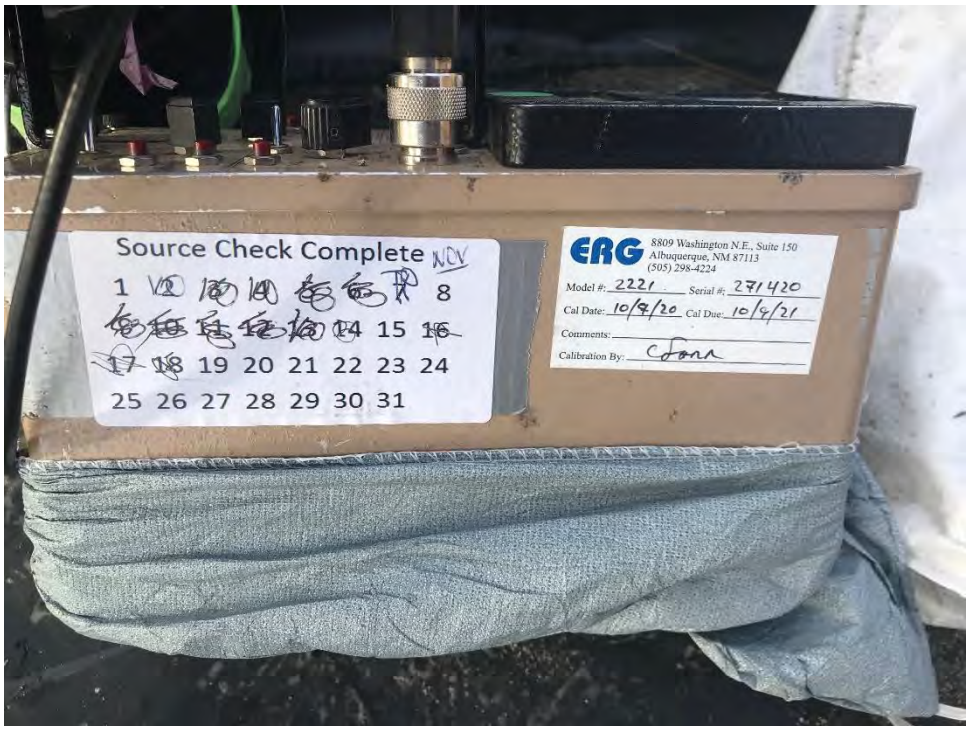



Figure 3 – Ludlum 2221 w/44-20 instrument, calibration due 10/9/2021


Figure 4 – Ludlum Model 19 instrument, calibration due 8/10/2021

## Surveillance Photographs HPNS-QAR-2020-0150 (Continued)

Figure 5 – RCT performing a surface contamination survey of the rotary hammer

Figure 6 – APTIM employees collecting a split sample at sample location #2

## Surveillance Photographs HPNS-QAR-2020-0150 (Continued)


Figure 7 – Filled sample containers with tamper tape applied

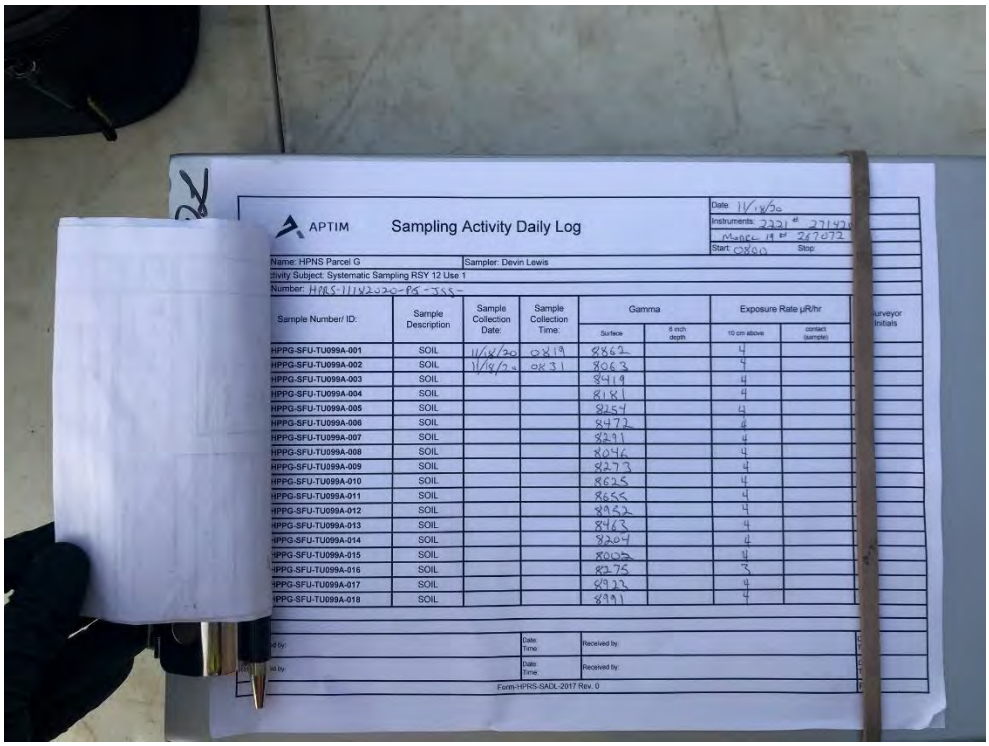



Figure 8 – Sampling Activity Daily Log (in progress)

*Battelle QA Form - APTIM Parcel G Phases 1/2 Soil Sampling*

| | | | |
|---|---|---|---|
| **Date/Time:** | Date: 11/18/2020 Time: 0800-0900 | **QA Inspector:** | M. Chi |
| **Contractor/Survey #:** | APTIM | **Surveillance #** | HPNS-QAS-2020-0150 |
| **Equipment surveyed:** | N/A | **Work area:** | Parcel G RSY Pad 12 Use 1 TU-99 SFU |

| *Requirement* | *Comments* | *Yes/No/NA* |
|---|---|---|
| **A Radiological Work Permit (RWP) has been prepared and approved for sampling** | **RWP #2020-PG-ST-01-0 covers soil sampling.** | Y |
| **The contractor RCT will record a background measurement with all survey instruments being used in an area representative of the area to be surveyed, but unlikely to be impacted by contamination. This data will be recorded into a notebook for later transfer on a Sampling Survey Form (CMS-710-07-FM-40125)** | **None.** | Y |
| **Prior to conducting soil sampling a gamma walk-over and static survey will have been conducted** | **Static survey was not completed due to rain causing the soil on the pad to be too saturated and soft for the RS-700.** | N |
| **Required personal protective equipment and dosimetry in accordance with the RWP will be available and used during soil sampling** | **None.** | Y |
| **Employees performing field sampling activities have been trained to CMS-710-07-WI-40123, Revision 0, 18-Feb-2016 ,and have met the training requirements, and have read and understood the RWP and/or site-specific procedures for the specific work.** | **None.** | Y |
| **All sampling will be conducted with clean or new equipment** | **Individual new disposable plastic scoops used at each sample location.** | Y |
| **With an issued map of the sampling locations the sampler will locate the starting point (0.0 Northing, 0.0 Easting) of the survey grid using GPS or hand measurements.** | **All 25 systematic sample locations were identified using a Trimble GPS unit.** | Y |
| **Locate the sample locations and set a pin flag or other semi-permanent marker to identify the sample location or sample number.** | **The sample locations were marked on the soil surface with white spray paint.** | Y |
| **Protect all sampling containers and paperwork from contamination by staging these items on plastic sheeting or similar. Don a pair of new gloves and change out used gloves after each sample location and as needed. Dispose of used gloves in designated radioactive waste recepticle.** | **None.** | Y |
| **Prior to collecting the soil sample,the sampler will remove any surface debris (e.g., vegetation, rocks, twigs) from the sample location.** | **Rocks and other debris were removed from the soil samples prior to mixing and placing in a sample jar.** | Y |
| **Sample collection should be performed with either a clean T-handled sample auger, shovel, trowel, or scoop.** | **New, clean plastic scoops used at each sample location to prevent cross-contamination.** | Y |
| **The sampler shall measure the depth of the sample bottom with a measure stick or tape measure and make note of the resulting depth when writing the Sampling Survey Form of equivalent** | **None.** | Y |
| **Soil samples will be placed into a bowl or bag and rocks or other debris will be removed. The sample will then be homogenized by stirring/mixing** | **Soil samples were mixed on plastic sheets and then placed into 500 mL plastic sample containers.** | Y |
| **Transfer the soil sample into the container specified in the project-specific SAP, receiving laboratory, or PRSO. If a split sample is required, evenly divide sample between containers** | **A split sample was provided to the EPA representative at sample location #2.** | Y |

| | | |
|---|---|---|
| **Sample containers will be closed, labeled, documentation completed, tamper tape applied, placed in resealable plastic bag, and placed into a sample collection cooler.** | **Tamper tape was applied once sample containers were closed.** | Y |
| **Each sample label will contain:**<br>**• Sample identification number**<br>**• Sample collection date (month/day/year)**<br>**• Time of collection (24-hour clock)**<br>**• Project number**<br>**• Sampler's initials**<br>**• Analyses to be performed**<br>**• Preservation (if any)**<br>**• Location (i.e., site name)** | **None.** | Y |
| **Prior to shipping samples the sampler will complete CMS-710-07-FM-40127, "Sample Shipment Checklist" or equivalent.** | **Not observed.** | N/A |
| **Any excess soil will be placed back in the hole at the sample location.** | **None.** | Y |
| **Sampling equipment will be decontaminated if neccesary or replaced with new equipment prior to collecting any sucessive samples** | **The rotary hammer used to loosen soil was decontaminated and surveyed with a Ludlum 2360 w/43-93 instrument at each sample location to prevent cross-contamination.** | Y |
| **Chain of Custody (COC) will be used to provide custody exchange record for the samples. The Chain of Custody Form also serves as a formal request for sample analyses.** | **Chain of Custody were used by both APTIM and EPA. An APTIM RCT released custody of the split sample to the EPA representative and both signed EPA's CoC.** | Y |
| **If a commercial carrier is used, the Chain of Custody Form will include the air bill number in the "Transfers Accepted By" column, and will be sealed in a resealable bag. The Chain of Custody Form will then be taped to the inside of the sample cooler lid.** | **Not observed.** | N/A |

References: "Final Parcel G Removal Site Evaluation Work Plan Addendum" February 2020
APTIM Work Instruction AMS-710-07-WI-40123 "Sample Collection for Radiological Analysis", July 30 2017

| | | | |
|---|---|---|---|
| **Signature:** |  | **Date:** | 11/18/2020 |

*Battelle QA Form - APTIM Parcel G Phases 1/2 Soil Sampling*

| | | | |
|---|---|---|---|
| Date/Time: | 11/18/2020. 0800 - 0900 | QA Inspector: | M.CHI |
| Contractor/Survey #: | APTIM | Surveillance # | HPNS-QAS-2020-0150 |
| Equipment surveyed: | N/A | Work area: | PARCEL 6 RSY PAD 12 USE 1 |

| Requirement | Comments | Yes/No/NA |
|---|---|---|
| A Radiological Work Permit (RWP) has been prepared and approved for sampling | RWP # 2020-P6-ST-01-0 COVERS SOIL SAMPLING. | Y |
| The contractor RCT will record a background measurement with all survey instruments being used in an area representative of the area to be surveyed, but unlikely to be impacted by contamination. This data will be recorded into a notebook for later transfer on a Sampling Survey Form (CMS-710-07-FM-40125) | NONE. | Y |
| Prior to conducting soil sampling a gamma walk-over and static survey will have been conducted | STATIC SURVEY WAS NOT COMPLETED DUE TO RAIN CAUSING SOIL TO BE TOO SATURATED FOR THE RS-700. | N |
| Required personal protective equipment and dosimetry in accordance with the RWP will be available and used during soil sampling | NONE. | Y |
| Employees performing field sampling activities have been trained to CMS-710-07-WI-40123, Revision 0, 18-Feb-2016 ,and have met the training requirements, and have read and understood the RWP and/or site-specific procedures for the specific work. | NONE. | Y |
| All sampling will be conducted with clean or new equipment | INDIVIDUAL NEW PLASTIC SCOOPS USED AT EACH SAMPLE LOCATION. | Y |
| With an issued map of the sampling locations the sampler will locate the starting point (0.0 Northing, 0.0 Easting) of the survey grid using GPS or hand measurements. | ALL 25 SYSTEMATIC SAMPLE LOCATIONS IDENTIFIED USING A GPS UNIT. | Y |
| Locate the sample locations and set a pin flag or other semi-permanent marker to identify the sample location or sample number. | LOCATIONS MARKED ON THE SOIL SURFACE WITH WHITE SPRAY PAINT. | Y |
| Protect all sampling containers and paperwork from contamination by staging these items on plastic sheeting or similar. Don a pair of new gloves and change out used gloves after each sample location and as needed. Dispose of used gloves in designated radioactive waste recepticle. | NONE. | Y |
| Prior to collecting the soil sample,the sampler will remove any surface debris (e.g., vegetation, rocks, twigs) from the sample location. | ROCKS AND DEBRIS REMOVED FROM SOIL SAMPLE. | Y |
| Sample collection should be performed with either a clean T-handled sample auger, shovel, trowel, or scoop. | NEW, CLEAN PLASTIC SCOOPS USED AT EACH SAMPLE LOCATION. | Y |
| The sampler shall measure the depth of the sample bottom with a measure stick or tape measure and make note of the resulting depth when writing the Sampling Survey Form of equivalent | NONE | Y |
| Soil samples will be placed into a bowl or bag and rocks or other debris will be removed. The sample will then be homogenized by stirring/mixing | SOIL SAMPLES WERE MIXED ON PLASTIC SHEETS AND THEN PLACED IN A 500ML SAMPLE CONTAINER. | Y |
| Transfer the soil sample into the container specified in the project-specific SAP, receiving laboratory, or PRSO. If a split sample is required, evenly divide sample between containers | A SPLIT SAMPLE WAS PROVIDED TO THE EPA REPRESENTATIVE AT SAMPLE LOCATION # 2. | Y |

TJ - 99 SPV 57°F CLOUDY

| | | |
|---|---|---|
| Sample containers will be closed, labeled, documentation completed, tamper tape applied, placed in resealable plastic bag, and placed into a sample collection cooler. | TAMPER TAPE WAS APPLIED ONCE SAMPLE JARS WERE CLOSED. | Y |
| Each sample label will contain:<br>• Sample identification number<br>• Sample collection date (month/day/year)<br>• Time of collection (24-hour clock)<br>• Project number<br>• Sampler's initials<br>• Analyses to be performed<br>• Preservation (if any)<br>• Location (i.e., site name) | NONE. | Y |
| Prior to shipping samples the sampler will complete CMS-710-07-FM-40127, "Sample Shipment Checklist" or equivalent. | NOT OBSERVED. | N/A |
| Any excess soil will be placed back in the hole at the sample location. | NONE. | Y |
| Sampling equipment will be decontaminated if neccesary or replaced with new equipment prior to collecting any sucessive samples | THE ROTARY HAMMER USED TO LOOSEN SOIL WAS DECONTAMINATED AND SURVEYED AT EACH LOCATION. | Y |
| Chain of Custody (COC) will be used to provide custody exchange record for the samples. The Chain of Custody Form also serves as a formal request for sample analyses. | COC USED BY BOTH APTIM AND EPA. | Y |
| If a commercial carrier is used, the Chain of Custody Form will include the air bill number in the "Transfers Accepted By" column, and will be sealed in a resealable bag. The Chain of Custody Form will then be taped to the inside of the sample cooler lid. | NOT OBSERVED. | N/A |

References: "Final Parcel G Removal Site Evaluation Work Plan Addendum" February 2020
APTIM Work Instruction AMS-710-07-WI-40123 "Sample Collection for Radiological Analysis", July 30 2017

| Signature: | | Date: | 11/18/2020 |
|---|---|---|---|

# Quality Assurance Surveillance Report

Surveillance Checklist Number(s) HPNS-QAS-2020-0151 Surveillance Date 11/18/2020

Surveillance Report Number HPNS-QAR-2020-0151 Surveillance Report Generation Date 11/18/2020

Number of Surveillance Photographs Taken 9

**Describe the work event, contractor, site location, date, and weather**. On 11/18/2020 between 10:27 and 11:06 the Battelle QA Field team performed a surveillance within Parcel C observing Gilbane Buildings 211/253 radiation and contamination control. The weather during this surveillance included cloudy skies with light rains. The temperature was in the low 60's F. Approximately 25 minutes of Gilbane staff time was used during this surveillance.

**Describe what was observed:** Upon meeting with the Gilbane ARSOR at the Buildings 211/253 radiological control point (Figure 1) and after acknowledging/signing the escorted visitor's log (Figure 2). Battelle staff reviewed the Gilbane RWP being used to guide concrete floor remedial efforts (Figure 3) and verified that radiological air sampling was being conducted as shown within Figures 4 and 5. Escorted mobilization was then made from the first floor containment (Figure 6) to the 4th floor of Building 253 to witness concrete floor remedial efforts at elevated location # 0065 (Figure 7).

The area surrounding location # 0065 (20' by 20') was maintained as a Contamination Area (CA). The postings used had yellow background with magenta lettering and trefoil (Figure 8). A small enclosure was used directly where concrete scabbling was being performed to contain any stray concrete chips that were not immediately captured with a HEPA vacuum (Figure 9).

All applicable surveillance checklist requirements were observed performed adequately during this surveillance.

**Describe any contractor deficient conditions observed with reference:**

1)

2)

3)

**Recommendations, Process Improvements, or Suggestions:**

**Battelle Project Signatories**

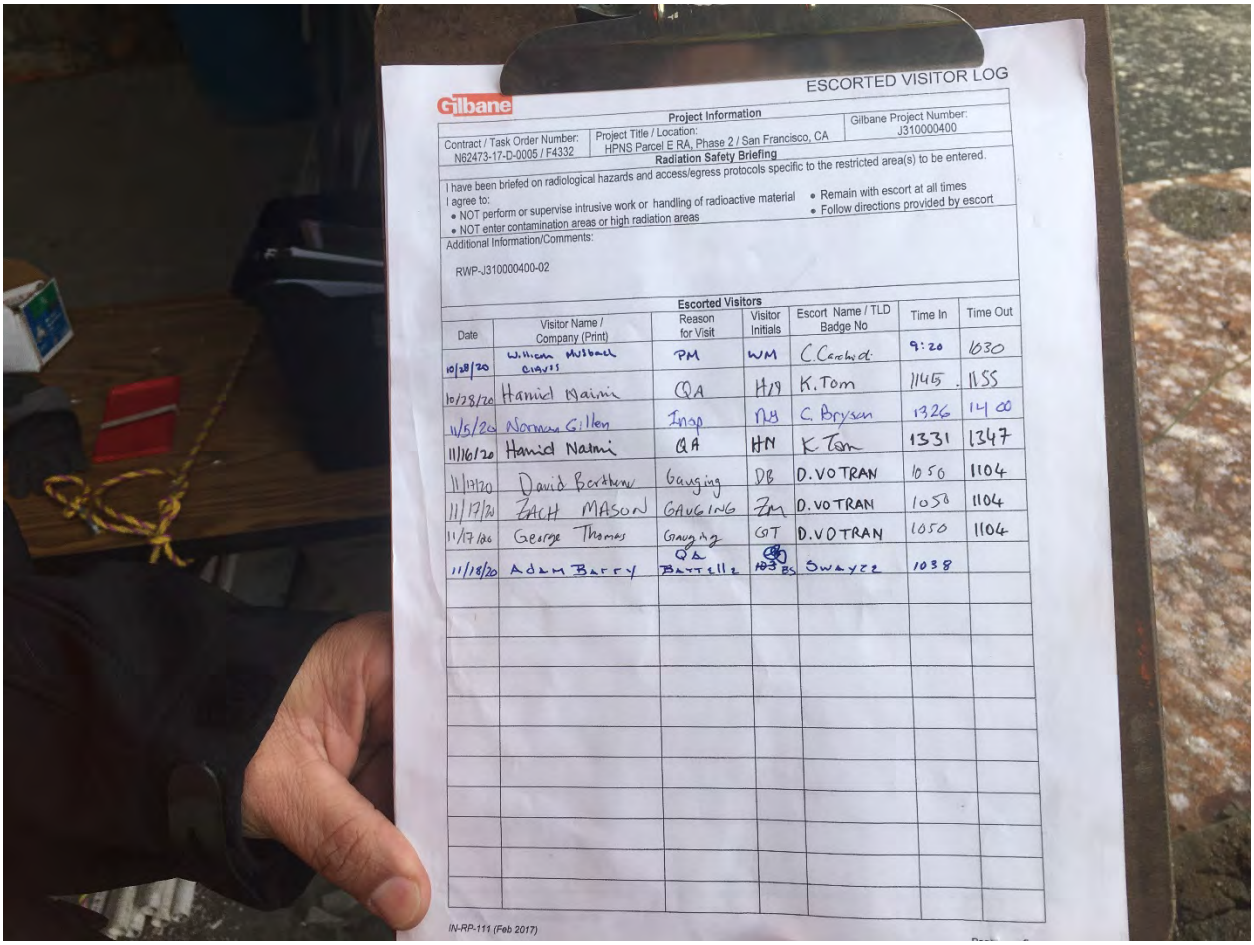
X Adam Berry, RRPT

Battelle Quality Assurance Field Team Member

## Surveillance Figures For HPNS-QAR-2020-0151

Figure 1. Gilbane Buildings 211/253 radiologically controlled area control point

## Surveillance Figures Continued



Gilbane

ESCORTED VISITOR LOG

**Project Information**

| Contract / Task Order Number: | Project Title / Location: | Gilbane Project Number: |
|---|---|---|
| N62473-17-D-0005 / F4332 | HPNS Parcel E RA, Phase 2 / San Francisco, CA | J310000400 |

**Radiation Safety Briefing**

I have been briefed on radiological hazards and access/egress protocols specific to the restricted area(s) to be entered.
I agree to:
- NOT perform or supervise intrusive work or handling of radioactive material
- NOT enter contamination areas or high radiation areas
- Remain with escort at all times
- Follow directions provided by escort

Additional Information/Comments:

RWP-J310000400-02

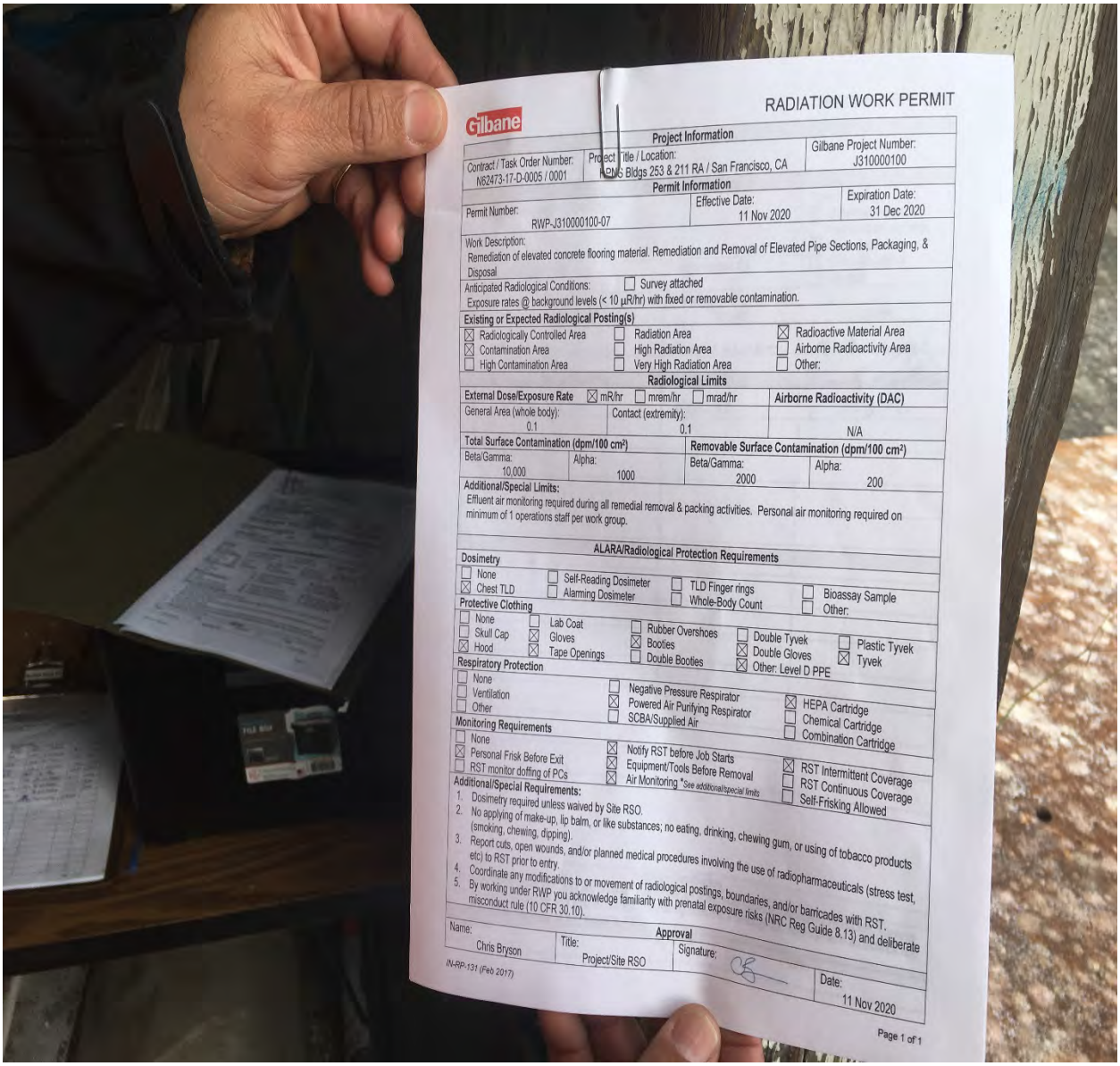
**Escorted Visitors**

| Date | Visitor Name / Company (Print) | Reason for Visit | Visitor Initials | Escort Name / TLD Badge No | Time In | Time Out |
|---|---|---|---|---|---|---|
| 10/28/20 | William Husbands | PM | WM | C. Cardwell | 9:20 | 1630 |
| 10/28/20 | Hamid Naimi | QA | HN | K. Tom | 1145 | 1155 |
| 11/5/20 | Norman Gillen | Insp | NG | C. Bryson | 1326 | 1400 |
| 11/16/20 | Hamid Naimi | QA | HN | K Tom | 1331 | 1347 |
| 11/17/20 | David Berkbuw | Gauging | DB | D.VOTRAN | 1050 | 1104 |
| 11/17/20 | ZACH MASON | GAUGING | ZM | D.VOTRAN | 1058 | 1104 |
| 11/17/20 | George Thomas | Gauging | GT | D.VOTRAN | 1050 | 1104 |
| 11/18/20 | ADAM BARRY | QA BATTELLE | AB | SWAYZE | 1038 | |

IN-RP-111 (Feb 2017)

Figure 2. Gilbane Escorted Visitor Log maintained at the RCA control point

## Surveillance Figures Continued



Gilbane

RADIATION WORK PERMIT

**Project Information**

| Contract / Task Order Number: | Project Title / Location: | Gilbane Project Number: |
|---|---|---|
| N62473-17-D-0005 / 0001 | HPNS Bldgs 253 & 211 RA / San Francisco, CA | J310000100 |

**Permit Information**

| Permit Number: | Effective Date: | Expiration Date: |
|---|---|---|
| RWP-J310000100-07 | 11 Nov 2020 | 31 Dec 2020 |

Work Description:
Remediation of elevated concrete flooring material. Remediation and Removal of Elevated Pipe Sections, Packaging, & Disposal

Anticipated Radiological Conditions: ☐ Survey attached
Exposure rates @ background levels (< 10 µR/hr) with fixed or removable contamination.

**Existing or Expected Radiological Posting(s)**

☒ Radiologically Controlled Area ☐ Radiation Area ☒ Radioactive Material Area
☒ Contamination Area ☐ High Radiation Area ☐ Airborne Radioactivity Area
☐ High Contamination Area ☐ Very High Radiation Area ☐ Other:

**Radiological Limits**

| External Dose/Exposure Rate ☒ mR/hr ☐ mrem/hr ☐ mrad/hr | | Airborne Radioactivity (DAC) |
|---|---|---|
| General Area (whole body): 0.1 | Contact (extremity): 0.1 | N/A |

| Total Surface Contamination (dpm/100 cm²) | | Removable Surface Contamination (dpm/100 cm²) | |
|---|---|---|---|
| Beta/Gamma: 10,000 | Alpha: 1000 | Beta/Gamma: 2000 | Alpha: 200 |

**Additional/Special Limits:**
Effluent air monitoring required during all remedial removal & packing activities. Personal air monitoring required on minimum of 1 operations staff per work group.

**ALARA/Radiological Protection Requirements**

**Dosimetry**
☐ None ☐ Self-Reading Dosimeter ☐ TLD Finger rings ☐ Bioassay Sample
☒ Chest TLD ☐ Alarming Dosimeter ☐ Whole-Body Count ☐ Other:

**Protective Clothing**
☐ None ☐ Lab Coat ☐ Rubber Overshoes ☐ Double Tyvek ☐ Plastic Tyvek
☐ Skull Cap ☒ Gloves ☒ Booties ☒ Double Gloves ☒ Tyvek
☒ Hood ☒ Tape Openings ☐ Double Booties ☒ Other: Level D PPE

**Respiratory Protection**
☐ None ☐ Negative Pressure Respirator ☒ HEPA Cartridge
☐ Ventilation ☒ Powered Air Purifying Respirator ☐ Chemical Cartridge
☐ Other ☐ SCBA/Supplied Air ☐ Combination Cartridge

**Monitoring Requirements**
☐ None ☒ Notify RST before Job Starts ☒ RST Intermittent Coverage
☒ Personal Frisk Before Exit ☒ Equipment/Tools Before Removal ☐ RST Continuous Coverage
☐ RST monitor doffing of PCs ☒ Air Monitoring *See additional/special limits ☐ Self-Frisking Allowed

**Additional/Special Requirements:**
1. Dosimetry required unless waived by Site RSO.
2. No applying of make-up, lip balm, or like substances; no eating, drinking, chewing gum, or using of tobacco products (smoking, chewing, dipping).
3. Report cuts, open wounds, and/or planned medical procedures involving the use of radiopharmaceuticals (stress test, etc) to RST prior to entry.
4. Coordinate any modifications to or movement of radiological postings, boundaries, and/or barricades with RST.
5. By working under RWP you acknowledge familiarity with prenatal exposure risks (NRC Reg Guide 8.13) and deliberate misconduct rule (10 CFR 30.10).

**Approval**

| Name: | Title: | Signature: | Date: |
|---|---|---|---|
| Chris Bryson | Project/Site RSO | | 11 Nov 2020 |

IN-RP-131 (Feb 2017)

Page 1 of 1

Figure 3. Gilbane concrete flooring decontamination radiological work permit # RWP-J310000100-007

## Surveillance Figures Continued

Figure 4. Gilbane upwind radiological air monitoring West of Building 211


Figure 5. Gilbane downwind radiological air sampling Southeast of Building 211

## Surveillance Figures Continued

Figure 6. First floor entry containment

## Surveillance Figures Continued

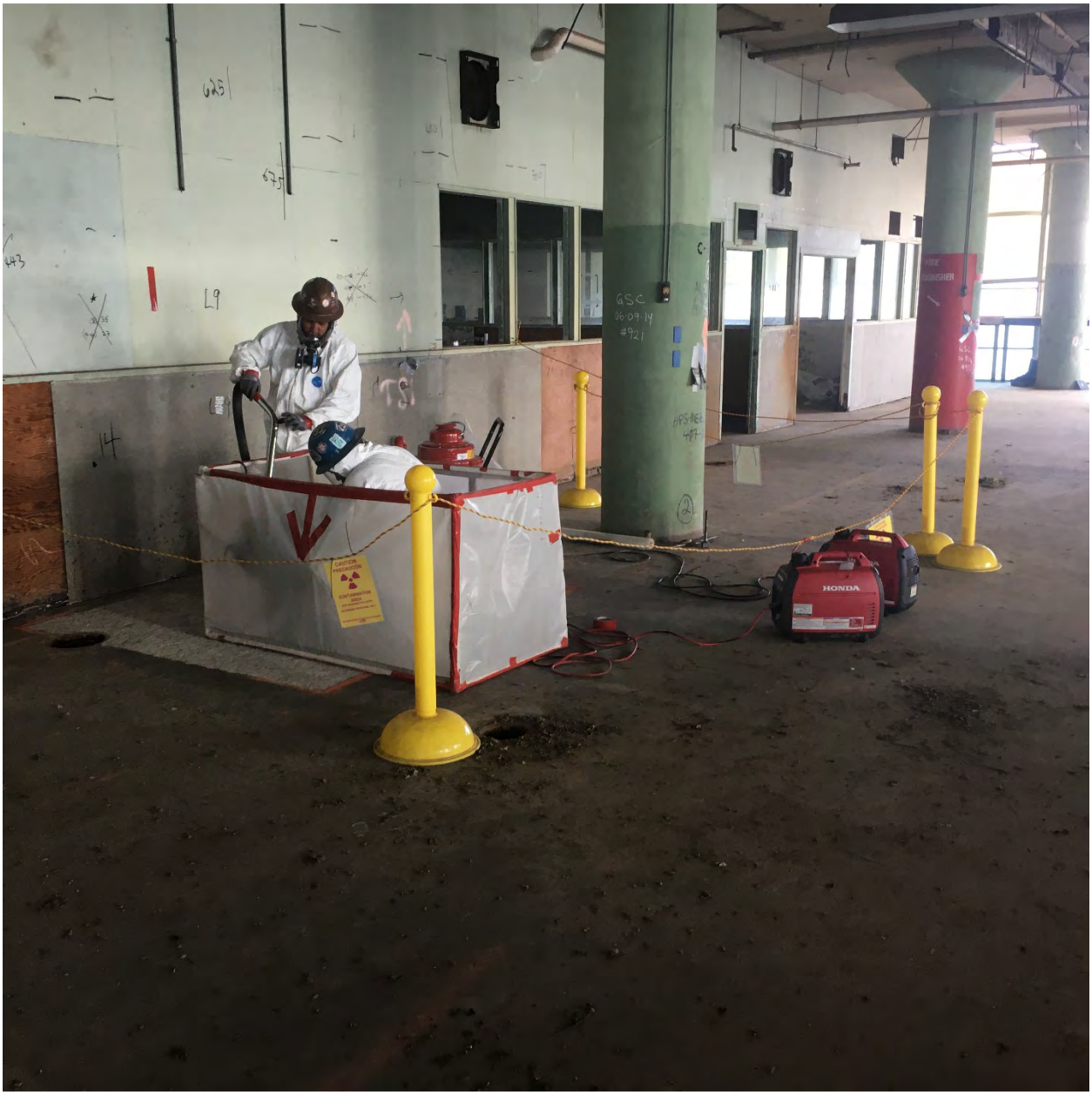



Figure 7. Building 253, 4th floor scabbling remediation in progress with a contamination area

## Surveillance Figures Continued


Figure 8. Gilbane contamination area posting

## Surveillance Figures Continued

Figure 9. Decontamination enclosure being used to contain concrete chips during scabbling

*Battelle QA Form - Gilbane Buidlings 211/253 Radiation and Contamination Control*

| | | | |
|---|---|---|---|
| **Date/Time:** | 11/18/2020 10:27 - 11:06 | **QA Inspector:** | Berry, Adam |
| **Contractor/Survey #:** | Gilbane Buildings 211/253 | **Surveillance #** | HPNS-QAS-2020-0151 |
| **Equipment surveyed:** | None | **Work area:** | Parcel C Buildings 211/253 |

| *Contractor Requirement* | *Comments* | *Yes/No/NA* |
|---|---|---|
| **Restricted area boundaries are demarcated using yellow and magenta floor tape, rope, ribbon, barricades, or other suitable identifier. Barriers, signs, gates, doors, fences, etc., are used to identify the boundary of the restricted area and to control access of personnel into the area.** | Both the radiologically controlled area (RCA) and contamination area (CA) were demarcated - Photographed | Yes |
| **A minimum of one sign is posted on each straight run of the boundary of the restricted area. Additional signs are placed at approximately 30-meter (100-feet) intervals on long runs of the boundary.** | The Buildings 211/253 exterior is posted as an RCA at intervals of 30 meters or less. The 20' by 20' CA was posted on all available sides. | Yes |
| **Postings consist of standardized signs or labels bearing the standard radiological trefoil symbol in magenta, purple, or black on a yellow background.** | Photographed | Yes |
| **Postings provide information concerning a specific radiological hazard and include the wording: "Caution: Controlled Area" or "Caution: Restricted Area." Supplemental information as specified by the Project/Site RSO also may be included as magenta (preferred), purple, or black markings on a yellow (preferred) or white background.** | CA posted as "Caution contamination area Authorized personnel only"<br>RCA posted as "Caution Radiologically controlled area Authorized personnel only | Yes |
| **An access control point is established to provide control over entry to and exit from the restricted area.** | RCA control point is established at the Building 211 Eastern sliding door. The CA control is an RCT. | Yes |
| **During periods of inactivity, the access control point is secured.** | RCA control point secured during periods of inactivity - Photographed | Yes |
| **Individuals are monitored for contamination on their person when exiting a restricted area .** | None | Yes |
| **Hand-carried items leaving a restricted area must meet the average and removable levels for acceptable surface contamination specified in Table 1 of Regulatory Guide 1.86** | No opportunity to observe during surveillance | N/A |
| **A step-off-pad is provided at the access control point of restricted areas controlled for contamination.** | None | N/A |

References: Gilbane Procedure PR-RP-160, Version R00, "Radiation and Contamination Control" 18-Dec-2015

| | | | |
|---|---|---|---|
| **Signature:** | Adam Berry, RRPT | **Date:** | 11/18/2020 |

Battelle QA Form - Gilbane Buidlings 211/253 Radiation and Contamination Control

| | | | |
|---|---|---|---|
| Date/Time: | 11-18-2020 10:27 - 1106 | QA Inspector: | Berge, Adam |
| Contractor/Survey #: | Gilbane 211/253 | Surveillance # | HPIS-BAS-2020-0151 |
| Equipment surveyed: | None | Work area: | Building 211/253 4th Floor |

| Contractor Requirement | Comments | Yes/No/NA |
|---|---|---|
| Restricted area boundaries are demarcated using yellow and magenta floor tape, rope, ribbon, barricades, or other suitable identifier. Barriers, signs, gates, doors, fences, etc., are used to identify the boundary of the restricted area and to control access of personnel into the area. | Both RCA + CA Demarcated Photographed | yes |
| A minimum of one sign is posted on each straight run of the boundary of the restricted area. Additional signs are placed at approximately 30-meter (100-feet) intervals on long runs of the boundary. | Entire Buildings 211/253 RCA 20'x20' CA surrounding Remediation area - Scabbling w/ Lapt. VAC | yes |
| Postings consist of standardized signs or labels bearing the standard radiological trefoil symbol in magenta, purple, or black on a yellow background. | Photographed | yes |
| Postings provide information concerning a specific radiological hazard and include the wording: "Caution: Controlled Area" or "Caution: Restricted Area." Supplemental information as specified by the Project/Site RSO also may be included as magenta (preferred), purple, or black markings on a yellow (preferred) or white background. | CA = " caution, contamination area Authorized personnel only " | yes |
| An access control point is established to provide control over entry to and exit from the restricted area. | RCA c/p Established CA c/p is on Rct at the CA. | yes |
| During periods of inactivity, the access control point is secured. | RCA c/p Photographed | yes |
| Individuals are monitored for contamination on their person when exiting a restricted area . | None | yes |
| Hand-carried items leaving a restricted area must meet the average and removable levels for acceptable surface contamination specified in Table 1 of Regulatory Guide 1.86 | Did not observe during Surveillance | N/A |
| A step-off-pad is provided at the access control point of restricted areas controlled for contamination. | None | N/A |

References: Gilbane Procedure PR-RP-160, Version R00, "Radiation and Contamination Control" 18-Dec-2015

| | | | |
|---|---|---|---|
| Signature: | | Date: | 11/18/2020 |

Hot spot Decon location 4th Fl. @ 65
64 / areas +
25 min Swipe

# Quality Assurance Survey Report

Survey Number(s) HPNS-QAS-2020-0152 Survey Date 11/19/2020

Surveillance Report Number HPNS-QAR-2020-0152 Survey Report Generation Date 11/19/2020

Number of Survey Figures 4

**Describe the work event, contractor, site location, date, and weather**. On 11/19/2020 between 08:23 and 08:57 the Battelle QA Field Team performed a confirmatory gamma static survey to validate APTIM Parcel E Phases 1/3 gamma static counts performed at RSY-4, Pad E-28, biased locations # 296, 297, 305 and 323. The weather during this survey included overcast skies with the temperature in the low 50's F. Approximately 30 minutes of APTIM RCA escort time was used during the performance of this survey.

**Describe what was observed:**

Upon arrival to APTIM Parcel E RSY-4 Pad E-28 a radiological control technician (RCT) was observed performing biased location gamma static counts at locations identified during a previous gamma walkover survey. The RCT performing the biased static counts was observed using a Ludlum Model 2221 which was paired to a Ludlum Model 44-20 gamma scintillator. This instrument combination being used was calibrated within the year and had been function tested/source checked earlier in the day (Figure 1). This instrument combination also exhibited a label containing soil background data and MDC information as required (Figure 2). The APTIM RCT used a contact geometry while performing gamma static counts (Figure 3).

As the APTIM RCT performed gamma static counting, Battelle staff documented those results in counts per minute and then conduct a follow-up 1-minute static count at the same location using the same geometry. Once Battelle's results were documented, the APTIM RCT would move on to the next biased location, which were identified with orange pin flags via GPS. Biased Location results #296, 297, 305 and 323 from both APTIM and Battelle were documented (Figure 4) and compared. The average difference between the APTIM and Battelle datasets is 5.65%, which is negligible assuming the natural variability of radiation and slight counting geometry differences.

**Describe any contractor deficient conditions observed with reference:**

1)

2)

3)

**Recommendations, Process Improvements, or Suggestions:**

X Adam Berry, RRPT

Battelle Quality Assurance Field Team Member

## Survey Figures For HPNS-QAR-2020-0152

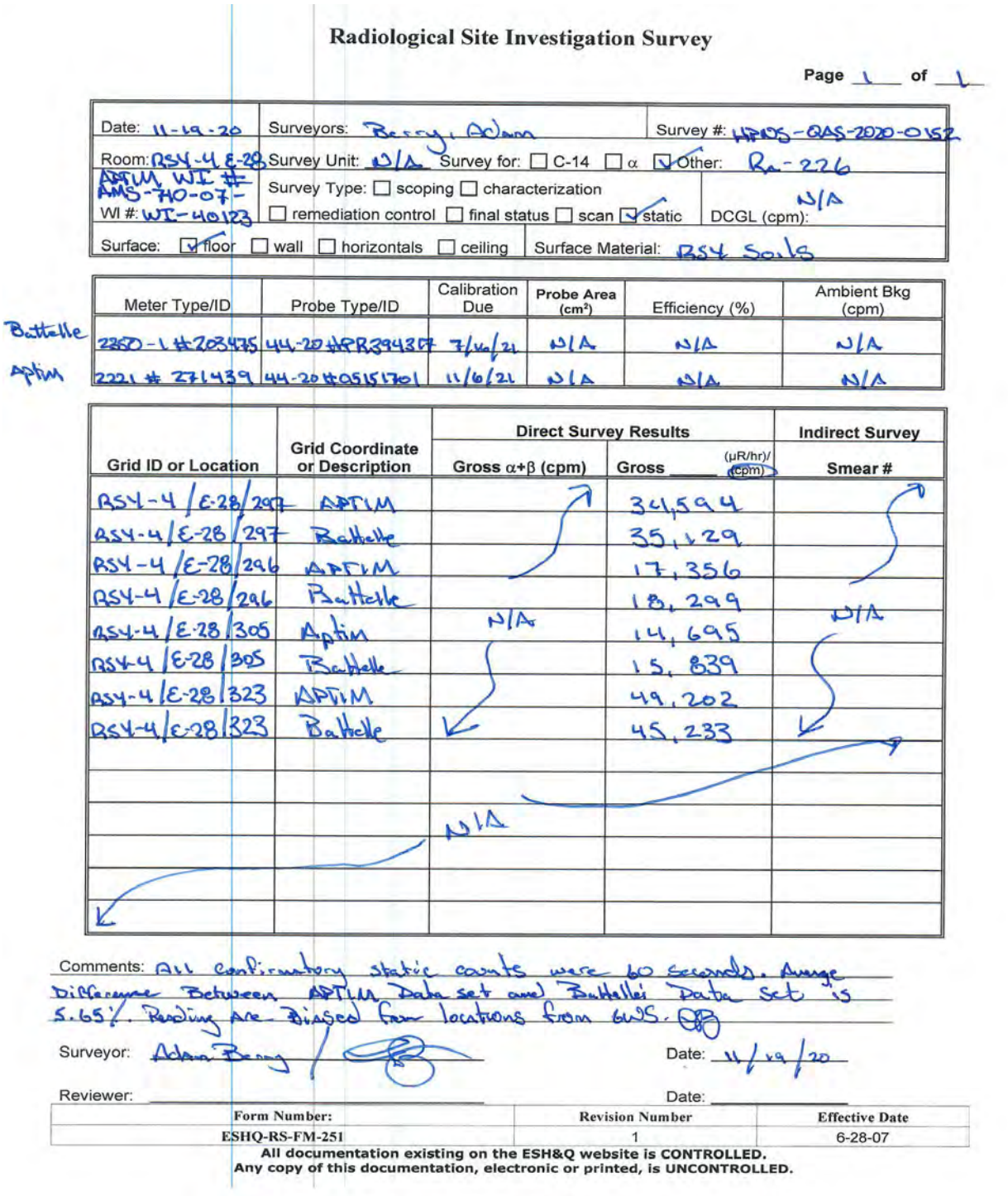

Figure 1. Ludlum Model 2221 Ratemeter (#271439) with current calibration and evidence of daily source check used by APTIM for biased location counting


Figure 2. Background and scan MDC information applied to instrument can as required

## Survey Figures Continued

Figure 3. Biased location counting geometry (on contact)

## Survey Figures Continued



**Radiological Site Investigation Survey**

Page 1 of 1

| | | |
|---|---|---|
| Date: 11-19-20 | Surveyors: Berry, Adam | Survey #: HPNS-QAS-2020-0152 |
| Room: BSY-4 E-28 | Survey Unit: N/A | Survey for: ☐ C-14 ☐ α ☑ Other: $Ra-226$ |
| APTIM, WI # AMS-710-07- WI #: WI-40123 | Survey Type: ☐ scoping ☐ characterization ☐ remediation control ☐ final status ☐ scan ☑ static | DCGL (cpm): N/A |
| Surface: ☑ floor ☐ wall ☐ horizontals ☐ ceiling | Surface Material: BSY Soils | |

| Meter Type/ID | Probe Type/ID | Calibration Due | Probe Area ($cm^2$) | Efficiency (%) | Ambient Bkg (cpm) |
|---|---|---|---|---|---|
| Battelle 2350-1 #203475 | 44-20 #PR394307 | 7/16/21 | N/A | N/A | N/A |
| Aptim 2221 # 271439 | 44-20 #05151701 | 11/6/21 | N/A | N/A | N/A |

| Grid ID or Location | Grid Coordinate or Description | Direct Survey Results: Gross α+β (cpm) | Direct Survey Results: Gross ____ (μR/hr)/(cpm) | Indirect Survey: Smear # |
|---|---|---|---|---|
| BSY-4/E-28/297 | APTIM | | 34,594 | |
| BSY-4/E-28/297 | Battelle | | 35,129 | |
| BSY-4/E-28/296 | APTIM | | 17,356 | |
| BSY-4/E-28/296 | Battelle | | 18,299 | |
| BSY-4/E-28/305 | Aptim | N/A | 14,695 | N/A |
| BSY-4/E-28/305 | Battelle | | 15,839 | |
| BSY-4/E-28/323 | APTIM | | 49,202 | |
| BSY-4/E-28/323 | Battelle | | 45,233 | |
| | | N/A | | |

Comments: All confirmatory static counts were 60 seconds. Average Difference Between APTIM Data set and Battelle's Data Set is 5.65%. Reading Are Biased from locations from GWS.

Surveyor: Adam Berry Date: 11/19/20

Reviewer: _____ Date: _____

| Form Number: | Revision Number | Effective Date |
|---|---|---|
| ESHQ-RS-FM-251 | 1 | 6-28-07 |

All documentation existing on the ESH&Q website is CONTROLLED.
Any copy of this documentation, electronic or printed, is UNCONTROLLED.

Figure 4. Battelle generated survey # HPNS-QAS-2020-0152